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U. S. War.

REPORT

OF THE

SECRETARY OF WAR;

111015

BEING PART OF

THE MESSAGE AND DOCUMENTS

COMMUNICATED TO THE

TWO HOUSES OF CONGRESS

AT THE

BEGINNING OF THE THIRD SESSION OF THE FIFTY-THIRD CONGRESS.

IN THREE VOLUMES.

VOLUME I.

WASHINGTON:

GOVERNMENT PRINTING OFFICE,

1894.

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NOTE.—The annual reports of the Chief of Engineers and Chief of Ordnance are published in Volumes II and III, respectively.

REPORT OF THE SECRETARY OF WAR.

WAR DEPARTMENT,
Washington, November 26, 1894.

To the PRESIDENT:

I have the honor to submit the following report of the operations of this Department for the past year.

The expenditures for the year ending June 30, 1894, the appropriations for the current year, and the estimates for the year beginning July 1, 1895, are shown in the following comparative statement:

Title.	Expenditures for fiscal year ended June 30, 1894.	Appropriations for fiscal year 1895.	Estimates for fiscal year ending June 30, 1895.
Salaries and contingent expenses.....	\$2,000,614.99	\$1,613,361.72	\$1,548,556.00
Pay, etc., of the Army.....	12,925,202.47	13,040,934.68	13,614,312.78
Subsistence of the Army	1,665,166.61	1,650,000.00	1,743,880.20
Quartermaster's Department	6,871,784.88	6,882,000.00	7,180,000.00
Expenses of recruiting	103,858.59	100,000.00	.....
Medical Department.....	180,817.51	173,500.00	190,500.00
Ordnance Department	838,482.11	1,036,600.00	1,081,600.00
Military Academy	330,622.05	333,862.38	424,729.11
Barracks and quarters.....	714,558.68	650,000.00	750,000.00
Rivers and harbors.....	19,494,037.49	20,043,180.00	12,862,115.00
Fortifications and seacoast defenses.....	3,947,863.56	2,427,004.00	7,357,703.50
Parks, cemeteries, military posts, etc.....	1,751,522.17	763,439.20	1,468,071.55
National Soldiers' Homes.....	2,798,620.40	2,894,473.00	3,336,326.00
Miscellaneous items.....	2,415,857.83	820,757.80	760,835.35
Total	56,039,009.34	52,429,112.78	52,818,629.55

OPERATIONS OF THE ARMY.

The reports of the officers in command of the several geographical departments corroborate the opinion, expressed in my last annual report that Indian warfare is virtually at an end in the United States, and that beyond occasional calls for police duty in the neighborhood of

Indian reservations, the Army will henceforth be relieved to a greater degree each year of the labor of armed surveillance over the tribes of the West.

There have been no serious infractions of the neutrality laws on the Mexican frontier during the year, but the presence of a regular force there for some time to come is clearly prescribed by the conditions of civilization in that region.

It was found necessary during the period beginning with March and extending through July of the current year, in various sections of the country, to employ a considerable part of the Army to execute the orders of the United States courts, otherwise successfully defied and resisted, to protect the dispatch of the United States mails, to remove restraints to travel and commerce, and to guard the property of the Government. The movement of troops thus necessitated was the largest which has taken place since the close of the civil war.

The difficult and extraordinary tasks imposed upon the officers and men of the Army were discharged promptly, firmly, and judiciously, in a manner which attested to the courage, intelligence, and loyalty of those called into active duty, and the thorough efficiency of every branch of the service. The militia of the States wherever employed also proved generally to be composed of qualified and reliable soldiers.

The authorized strength of the Army is now:

Cavalry officers.....	430
Artillery officers	280
Infantry officers	875
	<hr/>
Total officers of the line.....	1,585
General officers and in staff departments.....	551
	<hr/>
Total officers	2,136
	<hr/>
Enlisted men of cavalry	6,050
Enlisted men of artillery	3,975
Enlisted men of infantry.....	12,925
Enlisted men of engineers	500
Recruits.....	309
	<hr/>
Total enlisted men in companies and regiments.....	23,759
Enlisted men in detachments and unassigned to regiments.....	1,241
	<hr/>
Total authorized under act June 18, 1874	25,000
Enlisted men, hospital corps, act March 1, 1887	772
	<hr/>
Total all enlisted men.....	25,772

The number of enlisted men in service on October 31 was 25,516. Deducting the sick, those in confinement, recruits not yet joined, those absent on furlough, and others employed in staff departments or on detached service, the effective field strength on the same date was 20,114 of all arms.

BATTALION FORMATION.

I earnestly recommend that Congress enact the legislation necessary to establish in the Army the battalion formation, now adopted by the armies of every other civilized nation. As necessary to effect that change I recommend the removal of the limit of 25,000 men fixed by the act of June 18, 1874, and a return to the limit fixed by the act of July 15, 1870. Legislative approval of these two propositions will restore to the effective force about 4,000 enlisted men, bringing the actual strength of the Army up to the nominal strength now fixed by law. By these changes the Army will be increased in efficiency 20 per cent, in numbers about 16½ per cent, and in cost of maintenance only about 6 per cent.

In brief, it is proposed that two companies be added to each of the twenty-five infantry regiments, so that each shall consist of three battalions of four companies, and that two foot batteries be added to each of the five artillery regiments. No increase in the cavalry is proposed.

The organization of the line of the Army has undergone no material change since the close of the civil war. During this period of thirty years every large foreign army has been completely reorganized. Changes and improvements in arms, ammunition, and equipments have forced upon the leading strategists and tacticians of the great armies of the world the necessity of a broad departure from the old systems. All have adopted the battalion as the tactical unit for infantry and artillery serving as infantry, and nearly all the equivalent of the squadron as the cavalry unit. The light artillery battalion has a similar composition. Should our Army ever be brought into collision with disciplined foreign troops, our present formation would prove so defective as to turn the scale against us in a conflict on terms otherwise equal.

For some years the Secretaries of War, the generals commanding the Army, and the most eminent authorities in military science in this country have urged the adoption of the battalion formation, and our most progressive and best informed officers believe that the organiza-

tion of our small Army should embody this universally approved result of modern military thought.

Four companies are as large a body as it is now possible for one officer to lead and control in action. Formerly, and down to a recent date, the colonel could see and direct the movements of all the men of his regiment who marched and fought in double rank with touch of elbows. Under such conditions a regiment of 1,000 men occupied a front on the battle line no greater than would now be covered by a small battalion of one-third that number. A few years ago small-arms fire was ineffective at distances greater than 600 or 800 yards, while now it will be deadly at ranges of 2,000 yards, or at even greater distances. In modern warfare the men will act in small groups or singly, and the advance will be made in successive lines in open order. Perfect organization and perfect control by the commander of each unit will be absolutely essential to efficiency and success in the field.

The National Guard of several of the States, more progressive than the General Government, already has the battalion organization, and our own Army is being instructed as thoroughly as our defective system will permit, battalions of from two to five companies being improvised in the different garrisons.

By restoring to the military establishment the strength allowed up to 1874, and providing for the battalion formation, with a few minor changes, the organization of the Army will be:

Cavalry: Ten regiments of 3 squadrons each; 1 colonel, 1 lieutenant-colonel, 2 extra captains for adjutant and quartermaster, 5 non-commissioned staff; each squadron, 1 major or lieutenant-colonel, and 4 troops; each troop, 1 captain, 2 lieutenants, and 50 enlisted men.

Artillery: Five regiments of 3 foot battalions and 1 field artillery battalion each; 1 colonel, 1 lieutenant-colonel, 2 extra captains for adjutant and quartermaster, and 5 non-commissioned staff; each foot battalion, 1 major or lieutenant-colonel and 4 batteries; the field artillery battalion, 1 major and 2 field batteries; each foot battery, 1 captain, 2 lieutenants, and 65 enlisted men; each field battery, 1 captain, 3 lieutenants, and 75 enlisted men.

Infantry: Twenty-five regiments of 3 battalions each; 1 colonel, 1 lieutenant-colonel, 2 extra captains for adjutant and quartermaster, 5 non-commissioned staff; each battalion, 1 major or lieutenant-colonel and 4 companies; each company, 1 captain, 2 lieutenants, and 55 enlisted men.

The distribution of officers and men would then be about as follows:

	Col- onels.	Lien- tenant- col- onels.	Majors.	Cap- tains.	Lieu- tenants.	Troops, bat- teries, or compa- nies.	Total officers pro- posed.	Officers now al- low- ed each arm.	Enlisted men pro- posed.
Cavalry.....	10	10	20	140	240	120	420	430	6,050
Artillery.....	5	5	15	80	150	70	255	280	4,675
Infantry.....	25	25	50	350	600	300	1,050	875	16,625
Total.....	40	40	85	570	990	490	1,725	1,585	27,350
Now authorized.....	40	40	70	430	1,005	430		1,585	23,750
Increase.....	.....	.....	15	140	.....	60	.....	.....	3,501
Decrease.....	.....	.....	.....	.....	15	.....	.....	.....	.....

The battalion of engineers would remain as now with 4 companies of 500 men, making an aggregate of 27,850 of all arms, and a sufficient number remaining for the hospital corps, non-commissioned staff, ordnance detachment, Indian scouts and other unattached men, to make a total of 30,000. When deductions are made for the sick, absentees, etc., the effective strength of the Army would be about 25,000 soldiers and 40 field guns.

The formation desired admits of rapid and great expansion to meet the exigencies of actual warfare, and is especially adaptable to the small force constituting the peace establishment of the United States. Twelve years ago, before retiring from command, Gen. Sherman pointed out the great advantage of the formation in enabling us to put a large and effective force in the field upon short notice, by merely enlisting a sufficient number of additional private soldiers, the officers and organization being always ready for this expansion.

The promotion of 80 lieutenants to regimental adjutants and quartermasters is without expense save as to the cavalry regiments, and this amounts to but \$5,600 per annum.

In order that promotions in the different arms of the service may in the future be more nearly equal than in the past, and that a surplus of lieutenants of artillery, not required in the new organization, may be absorbed, it is proposed that a considerable number of those lieutenants should, upon their own application, be transferred to the infantry in present order of relative rank.

Resolving the effect of these changes into money it appears that for pay, rations, and clothing of the increased number of enlisted men proposed an increase of \$1,200,000 in annual appropriations will be required. Retrenchment in the administrative branches of the War

Department has reduced expenditures for the current fiscal year by upward of half a million dollars compared with last year, and the estimates contemplate further retrenchment for the coming fiscal year. These economies in the administration of the War Department may properly be turned to the benefit of the Army, and so regarded, the proposed increase in numbers and the higher efficiency in organization of the enlisted men may be obtained at an increase of only about \$700,000 over sums hitherto appropriated annually to the War Department.

The proposition outlined contemplates an increase in the number of line officers, involving an increase for salaries of about \$200,000. This increase of expenditures should be met and more than overcome by reductions in the expenditures for the staff.

The officers of the Army are now distributed by law to the staff and line of the Army as follows:

	Major-generals.	Brigadier-generals.	Colonels.	Lieutenant-colonels.	Majors.	Captains.	First lieutenants.	Second lieutenants.	Additional second lieutenants.	Total.
Of the staff—										
Adjutant-General's Department		1	4	6	4					15
Inspector-General's Department		1	2	2	2					7
Judge-Advocate-General's Department		1	1	3	3					8
Quartermaster's Department		1	4	8	14	30				57
Subsistence Department		1	2	3	8	12				26
Medical Department		1	6	10	50	78	32			177
Pay Department		1	2	3	25					31
Corps of Engineers		1	6	12	24	30	28	10	11	122
Ordnance Department		1	3	4	10	24	12			54
Signal Corps		1			1	5	3			10
Record and Pension Office			1							1
Post and regimental chaplains						34				34
Total staff		10	31	51	141	213	75	10	11	542
Total line			40	40	70	430	570	435		1,585
General officers	3	6								9

Ordinary business prudence suggests a consolidation of the Quartermaster's, Subsistence, and Pay Departments into a bureau of supply, to perform also certain duties connected with the furnishing of sundry articles of equipment now imposed on the Chief of Ordnance. The only reason for their continuance is the fact of their existence in the

past. Their maintenance as separate departments adds largely to the number of officers on staff duty, and involves an expense not justified by the service required.

The simple statement that it cost the Government last year the equivalent of a commission of 12 per cent to buy provisions for the Army, with attendant expenses, exposes the defect of the present system of supply. The disbursements on account of such purchases were \$2,168,165, and the expenses \$258,026, not including \$41,929.40, the salaries of retired commissaries and commissary sergeants.

The expense attending the paying of the Army was \$269,739.17, the amount of money disbursed by paymasters being \$12,054,152.54, or about 2½ per cent, requiring the services of 31 officers, whose lowest rank is that of major. Already a number of posts are paid by check, and with the mail, express, and banking facilities of the present day, and the proximity of troops to towns and cities, this plan could well be extended to cover the entire service, the actual distribution of the funds being devolved on the commandants of garrisons and their subordinates.

The transfer of the duties of these two establishments to the Quartermaster-General would simplify business and effect a marked saving in expense, while the organization of that department would require little increase. If the expediency of this proposition is doubted by Congress, then I earnestly urge the reduction of these departments by the early enactment of legislation suspending further appointments to the Subsistence and Pay corps until the number now fixed by law is considerably reduced.

The decrease in the number of posts—a reduction that must be still further extended—already renders unnecessary and redundant a number of officers in both of these departments. This proposition, together with possible reductions in other staff departments, would go far toward meeting the increased expense for strengthening the efficiency of the line. However contrary to the traditions of the Army these suggestions may be, they are in accord with the progressive methods of the present day, and it is believed their adoption would work marked benefit to the service.

CONCENTRATION OF TROOPS.

The policy of concentrating the troops and abandoning unnecessary posts has been prosecuted throughout the year. Where practicable small garrisons, remote from railroads, whose further retention has

become unnecessary by a change of conditions, have been consolidated with garrisons at more important centers, thus reducing the cost of maintenance and transportation and utilizing improved facilities for the prompt dispatch of troops to any point where their services may be required.

The changes made have in no instance lessened the protection afforded by the Army to any region in which a garrison has heretofore been stationed, but have considerably augmented the extent of territory over which that protection can promptly and effectively be afforded. Companies hitherto widely scattered have been brought together, as far as practicable, in their respective regimental organizations to promote their efficiency and *esprit de corps*. Many commands which have served continuously for long periods at isolated posts have received the consideration in more desirable assignments which their arduous services have justly earned. Besides materially adding to the comfort of enlisted men, concentration gives officers the opportunity to become familiar with the maneuvers of larger bodies in battalion and regimental formation. Improvement in the morale, discipline, and education of the Army has been no inconsiderable additional benefit.

On June 30, 1893, the Army was distributed among ninety-five independent posts. During the last year the number of posts was reduced to eighty, with garrisons ranging from 60 to 750 men. The aggregate area of the military reservations abandoned since the last annual report is upwards of 208,000 acres.

Ten of the twenty-five regiments of infantry have been concentrated at single posts. Sixteen garrisons now exceed in strength a full regiment of infantry, and twenty-two others consist of from four to seven companies each. Nine posts remain garrisoned by single companies, and fourteen by only two companies each. Except in so far as determined by acts of Congress for the creation of posts, the disposition of the Army has been made, according to the best judgment of the Department, to obtain the most useful results for the country from the force available.

It is respectfully urged that the establishment of new military posts by Congress in response to the appeals of local interests is likely to disturb a distribution of the Army which aims to secure with the small force under arms the highest efficiency and the fullest protection for the greatest extent of territory, and that the ambitions of localities should not be favored by legislation at the expense of the general welfare.

All the foot artillery is serving near the seacoast fortifications.

One-half of the field artillery, more than two-thirds of the infantry, and nine-tenths of the cavalry are still retained at posts west of the Mississippi river, while eight regiments of cavalry are in garrisons within or near the great mountain and plain region lying between the one-hundredth and the one hundred and fifteenth meridians. It is to the sparsely settled portions of this pastoral and sterile belt that the Indians would resort in the event of their breaking away from their reservations.

The distribution of the Army by geographical departments on October 31, 1894, was as follows:

Departments.	Officers.	Enlisted men.	Total.
California	131	1, 385	1, 516
Colorado.....	250	3, 223	3, 473
Columbia	127	1, 506	1, 633
Dakota	242	3, 190	3, 432
East	491	6, 626	7, 117
Missouri.....	283	3, 754	4, 037
Platte.....	173	2, 106	2, 279
Texas.....	161	1, 985	2, 146
Total	1, 858	23, 775	25, 633

RECRUITING SERVICE.

The abolition of the three recruiting depots and changes in the method of recruiting have already resulted in adding 1,500 men, equivalent to two regiments, to the effective strength at the military posts, and directly and indirectly will reduce expenditures about \$250,000 annually.

Heretofore three large depots, at which recruits were detained for weeks or months before joining their regiments, have been kept up at heavy expense. About 100 officers were required for the recruiting service and the average number of enlisted men, including those under instruction, was 1,600. Last year, of 8,000 recruits enlisted, over 3,000 were secured at military posts without any charge against army appropriations. The remainder, slightly less than 5,000, recruited under the old system, before they reached their regiments cost \$185,000, but this did not include the cost of maintenance of the depots, and the salaries, pay, and rations of many officers and several hundred enlisted men withdrawn from their regiments.

Post or regimental recruiting, which involves no charge against appropriations, will be extended and encouraged, and further reductions in the general recruiting service can undoubtedly be made.

The present method places the recruit almost immediately in the command with which he is to serve. He is trained, virtually from the beginning, by his company officers and becomes qualified for his duties much sooner than under the former system.

The conversion of the three recruiting depots into garrisoned posts, for which they were well adapted, has also saved the cost of constructing expensive quarters at other points. Fortification of Davids Island is part of the project for the defense of New York Harbor, and as its armament is being prepared, it requires an artillery garrison. Columbus barracks, Ohio, has become a regimental post, and Jefferson barracks, Mo., will receive an increased garrison.

The Major-General Commanding the Army reports that the character of the recruits received into the Army has been gradually elevated, and that this process has been made far more easy and certain through recent legislation. None but citizens of the United States, or those who have declared their intention to become citizens, and can speak, read and write the English language, are now enlisted. The rigidity and thoroughness of the test of qualifications to which applicants for enlistment are subjected are indicated by the fact that of 27,531 applicants only 7,817 were accepted and enlisted. Of these, 4,926 were native born, 2,891 of foreign birth; 7,352 were white, 419 colored, and 46 Indians.

The reduction from five to three years in the period of enlistment and the removal of restrictions upon reenlistments, effected by Congress at the last session, confirm opinions as to the advisability of those steps expressed in the last annual report of the Department. Thus, of 2,701 men discharged by expiration of service during the year, 2,079 reenlisted. Over two-thirds of the men whose terms of service will expire during the coming year have declared their intention to reenlist.

DISCIPLINE AND HEALTH.

The reports of the inspecting officers bear evidence to improvement in discipline and the exercise of care and prudence in administration throughout the service.

The trials by general court-martial for the year ended August 31, 1894, numbered 2,189, a slight decrease compared with the previous year, and there were 15,086 trials by inferior courts, an increase of 98 over the previous year, and 518 for desertion. The system of outline figure cards, which now number 9,000, of men whom it is desirable to

exclude from the ranks, has materially aided in checking the enlistment of deserters. The total number of desertions for the fiscal year was 1,073, a decrease from last year of 609. This gratifying reduction is in part attributable to improvement in the character of the men enlisted.

It has been the aim of the Department to increase as much as possible the comfort of the enlisted men. To this end the new quarters and barracks built or under construction have been planned with careful regard to convenience and sanitary requirements. The buildings are permanent structures of brick or stone, and when finished will reduce the present heavy annual cost of repairs and improvements to the old structures. With buildings completed and projected our Army will be as comfortably quartered as any army in the world.

The health of the troops has differed but little from that shown in the years of our best medical records. The admission rate per thousand was 1,289.04, slightly higher than last year, but still close to the lowest rate, 1,247, in 1887. The rate of discharge for disability for the year, 14.93 per thousand, is the lowest recorded. For the last decade the rate was 28.82.

The Medical Department of the Army during the year has established more intimate relations with the medical officers of the militia, from which benefit to both is anticipated.

The sales of commissary supplies for the year to officers amounted to \$290,906.35; to enlisted men, companies, detachments, and hospitals, \$425,867.01; and to post exchanges, \$36,890.25. It is recommended that sales on credit to enlisted men be confined to those who are not regularly paid or are employed upon active service in the field.

Transportation was furnished during the year for 383,664 persons, 3,708 animals, and 89,855 tons of material, the principal movement of troops changing station costing \$73,360.27.

The various operations, practical and experimental, of the Signal Corps show advances. Nearly 1,000 miles of permanent telegraph lines are now operated, and improvements in flying telegraph and telephone apparatus for field service have been made.

RETAINED PAY.

The laws for the retention until discharge of a part of the monthly pay of enlisted men were doubtless enacted to prevent desertion, but they have failed to produce that result. The first year of a soldier's

service is the most trying; the want of money is then most keenly felt, and to withhold a portion of his pay is a provocation to discontent, if not desertion. It places every recruit under the implied distrust of the Government, which at the same time is seeking to inculcate in him frankness, self-reliance, and the military virtues. It is not needed to encourage thrift, as the report of the Paymaster-General shows an increase of nearly \$80,000 this year over ~~last~~ in the voluntary deposits of soldiers.

SMALL ARMS AND EQUIPMENTS.

Seven regiments have been supplied with the new .30-caliber magazine rifle and it is expected that the infantry will be completely equipped with this weapon by the first of May.

The Major-General Commanding the Army renews his recommendation that the supply of these modern arms be increased so that not only all the regular troops and organized militia may be fully armed with them, but that there may be an adequate reserve for any additional force that may be called into service. To perfect the new weapon, tests of smokeless powder, cartridge cases, and bullets of various materials and types will be kept up during the year. The cavalry has been equipped with the new .38-caliber revolver, and, upon recommendation of the Major-General Commanding the Army, the .45-caliber revolver has been retained for the present for light batteries. Aluminum has been employed successfully in the making of spurs, waist-belt plates, and smaller articles, and it is hoped eventually to obtain the desired quality of the metal for other articles of equipment.

FIELD AND SIEGE GUNS.

During the year twenty-three 3.2-inch and twenty-two 3.6-inch field guns have been finished; twenty-five 3.2-inch field and ten 5-inch siege guns and ten 7-inch howitzers are nearly finished. Carriages for these guns are in process of fabrication. Funds are available for the manufacture of about forty more 3.2-inch guns, but further experiments with smokeless powder will be made before this work is undertaken. Provision has been made in all for one hundred and ninety 3.2-inch field guns, twenty 5-inch siege guns, sixteen 3.6-inch field mortars, twenty 7-inch siege howitzers, and it is proposed in time to manufacture a supply of modern field and siege guns and mortars adequate for the Army and

for issue to the militia of the States and to military schools and colleges.

SEACOAST DEFENSE.

The establishment of type disappearing gun carriages for 8-inch and 10-inch guns, invented by officers of the Ordnance Corps, and believed to be unequaled for rapidity and simplicity of action by any carriage elsewhere in use, is a notable achievement of the year. This problem solved, the armament of our harbors may now be prosecuted as rapidly as means are available.

The wisdom of promptly giving utility and practical value to the large investments which we have already made in preparation for coast defense by appropriating money to mount the guns and mortars, made or in process of making, and to place them in position, is manifest.

The approved projects for fourteen ports cover the following armament:

Ports.	Guns.			Mortars, 12-inch.	Case- mates.
	12-inch.	10-inch.	8-inch.		
Portland, Me.....	18	10	10	48	4
Boston, Mass	12	15	5	128	4
Narragansett Bay, Rhode Island.....	10	6	4	80	2
New York, N. Y	21	15	9	176	5
Philadelphia, Pa.....	3	6	2	16	3
Washington, D. C	4	6	3	8	2
Baltimore, Md	6	.....	4	32	1
Hampton Roads, Virginia.....	5	10	.....	32	2
Wilmington, N. C.....	2	.....	4	8	1
Charleston, S. C.....	6	4	.....	16	1
Savannah, Ga.....	2	.....	4	16	2
Key West, Fla.....	2	4	2	32	1
Mobile, Ala.....	4	.....	4	24	1
San Francisco, Cal.....	33	28	19	144	7
Total	128	104	70	760	36

Appropriations of \$1,000,000 for emplacements and platforms and mounting guns and mortars, \$250,000 for sites for fortifications, and \$100,000 for casemates, torpedoes, galleries, and submarine mines, are desired for the prosecution of engineer work on these fortifications.

The plan of seacoast defense devised by the Endicott Board, as modified in 1890, embraces fortifications at twenty-eight ports. The number of guns and mortars required to carry out that plan, of those finished, incomplete or for which forgings are ordered, of those

contracted for with the Bethlehem Iron Works, and of those yet to be provided for by Congress, is as follows:

Guns.	Required.	Built wholly or partly.	Bethlehem contract.	To be ordered.
16-inch.....	44	.....	.....	44
12-inch.....	245	42	25	178
10-inch.....	257	56	50	151
8-inch.....	137	54	25	58
	683	152	100	431
Mortars:				
12-inch.....	800	80	.....	720
10-inch.....	24	.....	.....	24
Total	824	80	.....	744

The estimated cost of the 16-inch gun is \$140,000, and the average cost at the Army Gun Factory of the 12-inch gun is \$48,750, of the 10-inch gun \$31,000, of the 8-inch gun \$16,000, and of the 12-inch mortar \$13,500.

To complete the manufacture of the contemplated armament will require \$20,639,987 for guns, of which \$250,000 is available under former appropriations, and \$9,801,120 for mortars. The contract work calls for an expenditure of \$3,430,130.

Carriages of various designs have been completed, or are being made, for twenty-five high-power guns and eighty mortars. The estimated cost of the 10-inch Buffington-Crozier carriage is \$18,000 and of the 10-inch Gordon carriage \$35,000. To provide the mounts for the projected armament will require \$12,500,000 for gun carriages and \$5,232,000 for mortar carriages, of which \$920,000 is available for the former.

The total expenditure for projected guns, mortars, and mounts will thus be \$50,277,248, including \$3,430,130 under the Bethlehem contract. Operated at its full capacity the Army Gun Factory at Watervliet can turn out in eleven and a half years the guns and mortars yet to be built; the Bethlehem contract requires the delivery of the last of its 100 guns by July 7, 1903, and carriages can be produced at Watertown or by contract as rapidly as the guns, so that the ordnance for our coasts can be finished within twelve years.

To accomplish this result annual appropriations aggregating \$4,250,000 for guns and carriages will be required. "The time has fully come," in the judgment of the Board of Ordnance and Fortification, "when Congress may make the most liberal appropriations for gun and mortar batteries, and for their armament, with the assurance that they will be expended judiciously." With that opinion I concur.

By the end of the calendar year we shall have completed and awaiting carriages or lifts twenty-nine 8-inch guns, thirty-five 10-inch guns, and thirteen 12-inch guns, besides fifty-one 12-inch mortars with carriages. One gun of the highest caliber named is already suitably mounted at Sandy Hook, and another is soon to be placed in position. Three of this caliber are also to be mounted at San Francisco during the fiscal year. One battery of sixteen 12-inch mortars, commanding the southern entrance to New York Harbor, is nearly completed, and by the close of the fiscal year a second battery, commanding the eastern entrance, and like batteries at Boston and San Francisco, will be mounted. Emplacements are prepared in addition at Portland, Me.; near Washington, D. C.; at Hampton Roads, Virginia; and initiated near Philadelphia, Pa., and at Pensacola, Fla. Casemates for submarine mines are finished or in construction at eleven ports.

GUN AND MORTAR CARRIAGES.

At the date of the last annual report of the Department a selection of a type carriage for 8 and 10 inch guns was expected within a few months. Since then the 8-inch Buffington-Crozier disappearing carriage has been tried with results, as stated by the Board of Ordnance, "exceeding for rapidity and smoothness of operation the most sanguine expectations of this Board." The carriage is the combined invention of Col. Buffington and Capt. Crozier, of the Ordnance Department, and reflects credit on the inventive skill of American officers.

It is a satisfactory solution of one of the most difficult problems which had confronted military science. I concur in the recommendation that liberal appropriations be made for the manufacture of these carriages for service, so that expenditures for guns of this caliber and emplacements prepared for them may speedily be utilized.

The 10-inch Buffington-Crozier disappearing carriage, differing materially only in proportions from the 8-inch carriage, has been tested and shows the best record for this type of carriage known to the Board of Ordnance and Fortification. Ten rounds were fired in fourteen minutes twenty-two seconds, with a detail of one noncommissioned officer and 11 men. In its report on these carriages the Board states:

The exhaustive test to which this system has now been subjected demonstrates that, on account of the simplicity of its construction, involving no valves, pumps, or other complicated appliances, and the fact that by methods easily understood by the average artillery soldier the operations of loading and maneuvering are effected with remarkable ease, certainty, and rapidity, it is worthy of adoption for use in the service of all sites except those where an all-round traverse is absolutely necessary.

Tests of the 10-inch modified Gordon disappearing carriage show that it is capable of very rapid fire, and it can be traversed through 360° in less than three minutes by 4 men, and the Board expresses its faith in the ultimate success of this system for positions requiring unusual cover and all-round fire. Several other systems of carriages have been tried by the Board, without completely satisfactory results, and further tests of some of these and of other types are proposed.

The Department has available eighty 12-inch mortar carriages, of which forty-two have been forwarded to the sites where they are to be placed. A mortar carriage, invented by Capt. Gordon, of the Ordnance Department, awaits final test at Sandy Hook, and promises to prove more economical than the present type. The manufacture of mortar carriages can proceed at any rate determined by the appropriations.

ARSENALS AND ARMORIES.

The plant at the Watervliet arsenal, for the manufacture of 8, 10, and 12 inch seacoast guns and field and siege guns, is complete and in satisfactory operation. The Army Gun Factory is capable of an annual output of twelve 8-inch, fifteen 10-inch, thirteen 12-inch guns, and fifty field guns. Of the excellence of its work the Board of Ordnance and Fortification states that it "has no reason to modify its encomium of these splendid arms, as expressed in its last annual report."

Since it began operations the gun factory has turned out thirty 8-inch, thirty-five 10-inch, and fifteen 12-inch seacoast guns, eight 12-inch steel mortars, one hundred and fifty 3.2-inch and twenty-five 3.6-inch field guns, twenty 5-inch siege guns, and twenty 7-inch siege howitzers, besides manufacturing projectiles and working on experimental guns.

Improvements in details are steadily diminishing the time and cost of construction, the introduction of electricity for power in the gun shop saving about one-third of the cost of fuel. In its finished plant at Watervliet the Government has an establishment which for the quality of its work is unsurpassed by any gun factory in the world.

The gun-carriage plant at Watertown arsenal has been enlarged and improved by the erection of new shops and machinery. Seven 8-inch and three 12-inch barbette carriages have been completed during the year, five 10-inch and two 12-inch barbette carriages and four 12-inch gun lifts are in process of construction.

The plant at the Rock Island arsenal for the manufacture of field and siege artillery carriages is in active operation.

The transfer of machinery from the old to the new shops for the manufacture of the magazine rifle at the Springfield Armory has been effected during the year, and within a short time the new works will be in complete operation. The first of the new .30-caliber magazine rifles was completed on January 1, and the present daily output of 60 rifles will soon be advanced to 80 a day. About 3,000 rifles of the new model have been manufactured.

The plant for the production of ammunition for the new infantry arm at the Frankford arsenal produces daily 8,000 .30-caliber cartridges, besides .45-caliber ammunition, the manufacture of which must continue until the old arm has been entirely withdrawn. During the year 212,000 rounds of the new ammunition were made.

The proving ground at Sandy Hook is developing and improving as rapidly as circumstances permit. The tests of ordnance at this point determine manufacture, and it is important that this establishment be kept in an efficient condition. A saving of \$25,000 in transportation has been effected this year by the use of the railroad on the grounds, which connects with the railroad system of the country.

During the year the West Point Foundry has fulfilled its contract by the delivery of the last of the eleven 8-inch guns, which have been tested and are ready for mounting.

The South Boston Iron Works have fulfilled their contract by the delivery of the last of the forty-three 12-inch mortars.

These, with thirty similar mortars, delivered by the Builders' Foundry, Providence, complete Government contracts for guns and mortars, except for one hundred high-power guns with the Bethlehem Iron Works. While only one type 8-inch gun of this contract has yet been delivered, the Board of Ordnance and Fortification report:

Such progress has been made in the preparation of the plant and the production of forgings that the contract is likely to be completed within the time limit. [July 7, 1903.] The Board is satisfied that the contract has effected the main object which Congress had in view in providing for it, which was the establishment of a private plant capable of furnishing and assembling guns of as large a caliber as 12 inches.

The machine shop and assembling plant are now in operation at Bethlehem, 65 of the 90 forgings for the twenty-five 8-inch guns, 153 of the 165 forgings for the first fifteen of the fifty 10-inch guns, and 28 of the 88 forgings for the first eight of the twenty-five 12-inch guns have been accepted by the Government. The delivery of guns during the coming year under this contract will permit tests and aid in determining the

advantages and disadvantages in time, expense, and quality of private contract work compared with work at the Army Gun Factory.

POWDERS AND PROJECTILES.

The problem of providing suitable brown powders of domestic manufacture for our high-powered seacoast guns and smokeless powders for field and siege guns has been in progress during the year, and should continue until the problem is solved. Experiments on a more extended scale than in the past should be carried on. The Department renews its invitation to American inventors and manufacturers to submit samples for test at Sandy Hook or the Benicia arsenal with a view to their undertaking the supply of this indispensable material.

Tests of smokeless powder for the new infantry arm have led to the purchase of sufficient to permit the manufacture of cartridges for present needs, but further improvement as the result of continuing tests is confidently expected. During the year nearly 1,200 shot and shell of various types and calibers have been purchased, and about 350 more will be bought with funds on hand. The steady improvement of armor calls for a like improvement in projectiles, and unless a maximum of the resisting power of armor shall be reached there can be no cessation in the development of the gun, powder, and projectile.

AUXILIARY MATERIAL.

Satisfactory range and position finders, a most important adjunct to modern artillery, have not yet been adopted, but tests promise so early a solution of this difficulty that a board of artillery officers at New York has been intrusted with the development of a practical system for the use of these and other instruments in directing the fire of the fortifications at the Narrows.

The conversion of barbette carriages for 8-inch converted rifles and for 15-inch smooth-bore guns has been continued during the year. The changes required are inexpensive, and these guns are serviceable for the protection of shallow and narrow channels on secondary lines of defense.

DYNAMITE GUNS.

The pneumatic dynamite guns, carriages, and appliances were found, on trial, to fulfill the specifications of the contract entered into under the act of Congress which made the appropriation for their purchase. Three guns have been delivered and placed in position at Sandy Hook, and, as directed by law, contracts have been entered into for

the delivery of three of similar type at San Francisco. The cost of the three already completed is \$155,938. In view of pending promising experiments with a powder gun for firing high explosives, further purchases are not recommended.

EDUCATION OF THE ARMY.

The special instruction afforded to officers of the Army at the four military schools approaches more nearly in scope and thoroughness the education which large standing armies permit abroad, and, in the opinion of the Major-General Commanding the Army, the military service is securing through these schools a corps of officers generally superior in education to that of any other army in the world.

The artillery school at Fort Monroe is reported in a prosperous condition. The class of non-commissioned officers, numbering sixty, has been a valuable feature. Artillery target practice shows improvement. The pressing need of this school is modern ordnance of every kind and the improved appliances of warfare, which the Department will endeavor to provide as rapidly as possible. As our projects for coast defense develop this school must become a more important feature in our programme of military education.

Forty-six officers composed the student class at the Infantry and Cavalry School at Fort Leavenworth, which has been maintained in a high state of efficiency. Its value as a post graduate institution is constantly increasing. By graduating a class of officers annually, instead of biennially, the commandant believes it would soon be possible to extend the advantages of the school to every young cavalry and infantry officer. Quarters for about forty additional officers would be necessary to enable this to be done, and as funds are available increased accommodations will be provided.

The combined operations of the two arms at the Cavalry and Light Artillery School at Fort Riley have been the most instructive work conducted at that post. The school has been in operation less than two years, and its special lines of instruction have been disturbed during the year by calls for active service upon commands assigned to the school. Gratifying progress in fieldwork and target practice is reported.

The range of topics made the subject of discussion in the post lyceums during the past year shows marked improvement in this respect over the previous year, but still further improvement can be made.

The lyceum affords an opportunity for the display of original military thought, and by bringing to the notice of superior officers and of the

Department exceptional military talent, it becomes available and promotes a higher standard of military intelligence.

The Division of Military Information has made headway in furnishing the line of the Army with information concerning the progress of military science, and its purpose and efforts will be encouraged.

The War Department library has been placed under the supervision of the Chief Signal Officer of the Army, and steps have been taken to utilize it to the best advantage as a reference library for the officers of the Army. About 30,000 volumes and pamphlets have been turned in by the several bureaus, 1,728 books and pamphlets have been added by gift or purchase, and a systematic attempt is under way to complete the collection of military literature, especially relating to American wars. These endeavors have increased materially the facilities for military study and research, and have already proved a stimulus to the higher education of the officers of the Army.

THE MILITARY ACADEMY.

The Superintendent of the U. S. Military Academy at West Point reports that on September 1, 1894, the cadets numbered 322, including two of foreign nationality admitted by special permission of Congress. The number of cadets authorized by law is 371, but for some years the attendance has been considerably less, and below the number which the Academy can accommodate. The requests for officers of the Army as instructors at schools and colleges increase every year, while the standard of technical attainments fixed for military officers rises appreciably each year in the armies of the world.

It is desirable, accordingly, that fuller use than at present be made of the facilities for the education which the Military Academy affords. To this end it is recommended that the President be authorized to appoint annually 10 cadets at large. With the growth of our system of coast defense and the expansion of the field of military instruction by officers of the Army, a further increase in the near future to the full working capacity of the Academy at West Point will doubtless prove advisable.

The superintendent reports that the institution is in a flourishing condition. The new gymnasium has been finished and the new academic building approaches completion. A site has been selected for the Memorial Hall, to be constructed with the generous bequest of \$250,000 by the late General George W. Cullum, and work upon the structure will begin in the spring.

MILITARY SCHOOLS AND COLLEGES.

The number of pupils at 95 schools and colleges under military instruction by officers of the Army during the last quarter of the school year was 13,070. During the corresponding quarter of 1891 the number was 7,366. The figures point to a wholesome growth of public interest in military training and an appreciation of its advantages. I renew the recommendation made last year that the opportunities for military instruction by officers of the Army, now open to colleges, be extended to the high schools of our large cities and to normal schools.

The number of officers detailed for this special duty increases annually, but I concur in the opinion of the Major-General Commanding the Army: "No better employment can be given to the officers of the regular Army in time of peace than in this wide dissemination of elementary military education." No return has been made of the number of pupils in institutions receiving military instruction from officers of the militia, but it is known to be considerable. The scheme of imparting military instruction at schools and colleges by the Government is relatively new, and in time it will be desirable to prescribe more closely the minimum number of pupils and more particularly the number of hours of instruction as conditions to the detail of officers at schools and colleges.

THE MILITIA.

Army officers on duty with the national guard of the States, of whom 27 were regularly assigned to State headquarters, concur in reporting steady improvement in the training and efficiency of the militia. The fact that State camps of instruction, in which 40 additional Army officers participated, were held by 33 States is proof that State military establishments are on a better footing now than ever before in time of peace. In several instances Army detachments took part in State camps, and the profit to the Army in acquaintance with the soldierly qualities of the militia and to the militia in observation of the attention of the regulars to details, which is necessary to the perfect soldier, is both a present benefit and an investment for the future from which we should reap returns in any emergency calling for the cooperation of the two forces.

At the current rate of progress, within a few years some of our principal seaports will be strongly fortified with modern artillery. The numbers of the Army, except in time of war, will not permit full garrisons for the points to be fortified, requiring, it is estimated, nearly

90,000 men. The instruction of portions of the militia of the seaboard States in the use of modern heavy ordnance is thus a necessary part of our general projects of military education and coast defense, to which attention is now invited, as the time is not remote when plans for that instruction must be devised by the Federal and State military authorities.

The issue of field guns and ordnance supplies to the militia has been continued as far as appropriations permit, but the increasing requests of the States each year exceed the Department's resources, available by law. More liberal provisions of law for arming the State troops will be an economical investment. Changes in the laws to permit arming the militia with improved weapons and the improvement of its equipment, and to promote closer relations between Federal and State troops, have a claim upon the favorable consideration of Congress.

The strength of the militia shows an increase of about 5,000 since last year, the latest returns showing a total organized force of 117,533 officers and enlisted men. The artillery arm, maintained by thirty-three States, has an enrollment of 5,922 officers and men; the cavalry arm, maintained by twenty-six States, of 5,069. The geographical distribution of this force follows:

Organized strength.

States and Territories.	1894.	States and Territories.	1894.
Alabama.....	3, 073	New Hampshire.....	1, 379
Arkansas.....	1, 043	New Jersey.....	3, 896
California.....	5, 335	New York.....	13, 254
Colorado.....	945	North Carolina.....	1, 609
Connecticut.....	2, 735	North Dakota.....	498
Delaware.....	354	Ohio.....	6, 180
Florida.....	1, 091	Oregon.....	1, 582
Georgia.....	4, 301	Pennsylvania.....	8, 959
Idaho.....	308	Rhode Island.....	1, 561
Illinois.....	5, 254	South Carolina.....	4, 754
Indiana.....	2, 681	South Dakota.....	773
Iowa.....	2, 554	Tennessee.....	3, 016
Kansas.....	1, 687	Texas.....	2, 934
Kentucky.....	1, 320	Vermont.....	790
Louisiana.....	1, 557	Virginia.....	3, 136
Maine.....	1, 304	Washington.....	1, 598
Maryland.....	2, 104	West Virginia.....	808
Massachusetts.....	6, 133	Wisconsin.....	2, 701
Michigan.....	2, 940	Wyoming.....	450
Minnesota.....	1, 976	Arizona.....	468
Mississippi.....	1, 221	New Mexico.....	486
Missouri.....	2, 255	Oklahoma.....	.....
Montana.....	540	Utah.....	803
Nebraska.....	1, 185	District of Columbia.....	1, 539
Nevada.....	463	Aggregate.....	117, 533

THE SOLDIERS' HOME.

The report of the president of the Board of Commissioners of the Soldiers' Home shows 1,065 inmates on the roll on September 30, 1894, and an average attendance of 734. The permanent fund of the institution amounts to \$2,574,036.79, an increase of \$94,693.47 during the year, in part attributable to a reduction of \$19,346.90 in current expenditures. The number of pensioners who are resident inmates is 582, and the average pension received by each is \$175.77. The president of the board renews his recommendation that inmates of the Home receiving more than \$8 a month pension shall contribute toward their maintenance.

MILITARY PRISON.

The transfer of the military prison at Fort Leavenworth, Kans., to the civil authorities of the United States, and the confinement of most of the military prisoners hereafter at the large military posts, would save men and money to the Army, and would enable the Government to carry out economically a project for the care of prisoners of the United States already approved by Congress. The prison has ample capacity for 550 convicts, and is in excellent condition for their custody.

The number of men now confined there is 433. Of this number 60 are in confinement on convictions of crimes under the civil law, and 373 are serving sentences for offenses against military law and regulations, of whom 254 will be discharged during the coming six months. During the last fiscal year the institution was a charge of \$79,489 against the Army appropriations, not including the pay and allowances of the 8 officers and 133 men of the guard, who were withdrawn for its management and care from the active force of the Army. The cost of transporting prisoners and guards to the prison from various posts increases this sum to \$100,000 a year.

Whatever may have been the necessities when the prison was established, large posts in every military department are now well adapted to the confinement of offenders against military law. By detaining them at such posts within the department in which offenses are committed an annual saving of \$15,000 in transportation alone is practicable, while their labor could be turned to much useful and necessary work, relieving the soldier from distasteful and irksome tasks tending to discontent and desertion. The objects of punishment for violations of military law in most cases can better be served by confinement in

smaller numbers at the large posts than by the questionable influence of a large prison.

The President, in his message to Congress dated December 6, 1886, recommended the establishment of a prison for United States convicts, and three years ago a law was enacted for the selection of sites for three such institutions, at a cost not exceeding \$500,000 each, but no appropriation was made to carry the act into effect. The transportation of 161 United States prisoners from Arkansas, Texas, and the Indian Territory to Brooklyn, N. Y., during the past year cost \$11,995, two-thirds of which could have been saved by transportation to the prison at Fort Leavenworth. Legislation authorizing the conversion of the military prison at Fort Leavenworth into a United States prison, under the care and custody of the Department of Justice, is therefore suggested as desirable on military and civil grounds.

APACHE PRISONERS OF WAR.

After eight years' confinement, at a charge of nearly half a million dollars to the Army appropriations, the remnants of certain bands of Apache Indians, numbering 346, held as prisoners of the Government, have been established on military lands near Fort Sill, and under strict surveillance have begun to sustain themselves by agriculture. In consequence of atrocities committed upon settlers in the Southwest these bands were pursued and captured in 1886.

In the autumn of that year, with their families, numbering in all 498 persons, they were imprisoned at Fort Pickens and Fort Marion. Of the youth, many were sent to the Indian school at Carlisle, Pa., so that when the prisoners were moved to Mount Vernon barracks in April, 1887, they numbered 400. At this place everything possible was done to direct their progress toward a state of civilization, but the military reservation at this post was too limited to permit much instruction in agriculture. On September 1, 1891, and March 21, following, 46 captives from the White Mountain Apache Reservation were also sent to Mount Vernon barracks. During their confinement, on account of unfavorable climate and other conditions, the original number was reduced nearly one-half by death, so that there survive but 18 who were in arms when taken into custody, and 55 who had at some time been hostile to the Government, while 157 children have been born in captivity.

Secretary Endicott in 1888 reported: "It is very desirable to secure

some place where the climate is suitable, and opportunity may be had to instruct and employ them in agriculture," and in 1890 Secretary Proctor asked for authority from Congress to transfer them to Fort Sill. Efforts from time to time to secure the permission of Congress failed until, by the army appropriation act of August 6, 1894, authority was bestowed upon the War Department to transfer the prisoners to any military reservation under control of the Department.

Full investigation of all the conditions convinced the Department that the reservation at Fort Sill, which is about 600 miles distant from the scenes of their crimes, was best adapted by climate, nature, and extent of land, military garrison, and other considerations for a permanent agricultural settlement of these prisoners. Accordingly, in September, they were moved to Fort Sill, and are being established on military lands, with a garrison entirely adequate to their control and under conditions tending to their self-support and civilization.

RIVERS AND HARBORS.

The report of the Chief of Engineers of the Army shows in detail the progress of the year in the important work of river and harbor improvement. The act of August 18, 1894, carried appropriations for these objects aggregating \$11,643,180, and the appropriations otherwise made for continuing work already under contract as ordered by previous legislation brought the total appropriations for the coming year up to \$20,043,180.

As required by statute, there has been transmitted for the information of Congress the statement of the engineer officers in charge, showing the amount that can be expended during the next fiscal year on the several works not under contract for which projects have been adopted. In view, however, of the very recent passage of a river and harbor bill, further appropriations at this time for work of this character are not recommended.

The estimates approved by the Department for continuing the work under existing contracts through the next year amount to \$12,872,115.

CHICKAMAUGA AND CHATTANOOGA MILITARY PARK.

Of the 5,521 acres comprising the Chickamauga and Chattanooga Military Park, 2,100 have been cleared of underbrush and 600 remain to be cleared to facilitate the work of the States in locating the position of their troops. Additions to roads to the extent of 16 miles,

making 41 miles in all, have been completed, reducing monthly expenses one-half. Twenty-three State commissions, with a committee from the Society of the Army of the Tennessee, are actively cooperating with the park commission in establishing the lines of battle.

Alabama, Connecticut, Kansas, Maryland, and West Virginia are the only States represented at the battles which have not yet appointed commissions, and it is expected that the legislatures of these States at their next sessions will take the necessary steps toward co-operation. Some of the lands on Missionary Ridge and Lookout Mountain, desired for the park, have been held at such exorbitant prices that the commission recommends that further efforts to purchase them be abandoned; but the present project contemplates the further purchase of 1,006 acres of the battlefield of Chickamauga. Massachusetts and Minnesota have completed the erection of their monuments, and the 55 monuments of Ohio have been erected.

The nine monuments to regular troops have been completed and pyramidal monuments of shell mark the positions where the general officers fell. Tablets for army headquarters and to indicate the movements of the corps and divisions of both armies through the three days' battles are in place, and some headway has been made with brigade tablets. Seventy or more guns, suitably mounted, will indicate the fighting positions of batteries at Chickamauga by the end of the year. An available balance of \$70,654.58 of \$651,710.63 appropriated during and since 1890, remained unexpended September 30, 1894.

GETTYSBURG BATTLEFIELD.

Much progress has been made since the last report in the work of preserving the lines of battle at Gettysburg, and ascertaining and marking the positions of the commands which participated in that engagement. Two hundred and fifty-six Union regiments, with 67 batteries, and 189 Confederate regiments, with 70 batteries, were engaged in the battle. Their movements were many and complicated, but in the main they have now been accurately established, and, upon verification, tablets will be placed at points held by the flanks of each regiment in its several positions, with a single cannon of war times to mark the place occupied by each battery.

The following suggestion from the last annual report of the Department has been approved and emphasized by recent action of the Gettysburg Memorial Battlefield Association:

In addition to the considerable sums expended for the preservation of points of historic interest in connection with this field by the Gettysburg Battlefield Memorial Association and other organizations and individuals, the sum of \$863,017.82 has been contributed to the work by States whose soldiers participated in the battle. This large outlay has been expended, under the supervision of the association mentioned, in the purchase of plots of land embracing the leading features of the battlefield, the construction of connecting roads and avenues, and the erection of suitable monuments and tablets. In the absence of any other provision for the permanent care and maintenance of this completed work it has been suggested that the General Government might well accept that charge and assume its control.

ANTIETAM BATTLEFIELD.

The work of determining and marking the positions of the Union and Confederate armies on the battlefield of Antietam has been carried on throughout the year, and is now believed to be drawing to a close. Congress has charged the Department with the duty of "preserving and marking" certain lines of battle at Antietam, in order to preserve the field, in all its physical aspects, as nearly as possible in the condition in which it was in September, 1862. This duty can best be performed by leaving the land in the hands of its original owners or their successors, who, by continuing to use it for farming, will preserve its topographical features as they existed in 1862.

The portion of Maryland in which the battlefield is situated has always been an agricultural region and bids fair to continue so indefinitely. So long, therefore, as the land remains in the hands of private owners, so long will it be to their direct interest to continue to use it for farming purposes and thus preserve the field as it appeared to the combatants. Were the Government to acquire large holdings of land on the battlefield or in its vicinity, it would be compelled, by its own agencies, to simulate the operations of agriculture—a task clearly outside the ordinary and usual scope of governmental endeavor, and involving large expenditures.

It is the purpose of the Department, if the necessary land can be bought reasonably, but not otherwise, to acquire several lanes or avenues along which the most severe fighting occurred, and upon the sites thus acquired to erect such tablets and markers as will clearly describe and explain the positions and operations of the several organizations of the armies of the Potomac and Northern Virginia which were engaged. It is not believed that the first cost of this method of marking will be great, or that the expense of maintenance will be considerable.

CONDEMNATION OF LANDS.

In executing the various laws requiring the purchase of land for military objects it frequently occurs that the prices demanded by owners are clearly unreasonable, in the judgment of the officers in charge. In such cases resort must be had to the rules prescribed by the statutes, and the result is so generally unfavorable to the Government as to justify the statement of a single but not exceptional experience of this Department.

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memorial of the early history of this region, and that the proceeds be applied to some purpose of a genuine public value.

MONUMENTS.

The contracts for the pedestal and statue to Gen. Logan, and for the pedestal and statue to Gen. Hancock which is to be erected at the intersection of Pennsylvania avenue and Seventh street, have been let. The committee of the Society of the Army of the Cumberland has contracted for a statue to Gen. Sheridan, and expects to deliver it early next autumn to the commission appointed by Congress, which has selected a site at the intersection of Pennsylvania avenue and E street northwest.

In 1892 the sum of \$50,000 was appropriated for a statue to Gen. Sherman, to which the Society of the Army of the Tennessee has undertaken to add a like amount. Pending collection of subscriptions it has been deemed inadvisable to enter into contracts for the monument, but the commissioners designated for that purpose have agreed on a site for it at the east front of the Capitol, north of Greenough's statue of Washington.

No monument has been erected at Washington to the memory of Gen. Grant. The site to the south of the statue of Washington appears well adapted for such use, and it is recommended that it be reserved for that object, and that Congress make ample provision for the erection of a statue that shall worthily perpetuate his memory.

I beg to suggest that the President be authorized to appoint a permanent commission, selected from the citizens of the country, and composed of those best qualified to pass upon the matters of art involved, to whom shall be intrusted the duty of the selection of designs and sites for future monuments at the capital. The present system of many commissions does not always produce the best artistic results.

ARLINGTON MEMORIAL BRIDGE.

I renew the recommendation for improved transportation facilities between the seat of government and the Virginia shore, and for the construction of a memorial bridge to render speedily accessible the principal military post of the capital, Fort Myer, and to furnish a befitting approach to the national cemetery at Arlington. The need of such a bridge to Potomac Heights grows more imperative each year, and the surroundings suggest that it should be so designed as to

become one of the permanent memorial structures of the capital. Historical associations and natural beauty give the site unsurpassed value for such a purpose.

RECORD AND PENSION OFFICE.

Index record cards of all the volunteer organizations of the civil war, of hospital muster rolls, rolls of deserters arrested, many miscellaneous rolls, and company descriptive books have been completed, and work on regimental descriptive books is in progress. All military records relating to the personnel or operations of the armies of the wars of the Revolution and of 1812 are being transferred to the office, and they will be reproduced by the index record card system as rapidly as possible. The total number of cases disposed of was 219,941, of which 170,301 were pension cases. During the year 6,024,667 military and 2,727 medical cards were added to the record, making a total of 41,127,149 cards available for current work. The completion of much of the work in which the office has been engaged has permitted a reduction of 292 in the clerical force, at an annual saving of \$334,200.

WAR RECORDS.

The publication of the official records of the rebellion brings the work down to the opening of the final campaign, and volumes covering operations culminating at Appomattox are in type. Thirty-one of the 35 parts of the Atlas have been issued. Such progress has been made that if no unforeseen delay occurs the volumes remaining to complete the publication will be in the hands of the printer by the close of the fiscal year. The publication, complete, will consist of 11,444 sets, each of 120 volumes, with probably 4 supplementary volumes. Since 1874 there have been appropriated \$2,156,343 for the work, and it is estimated that \$469,000 will be required to finish it.

In the administration of the affairs of the Department and in the prosecution of plans to promote the good of the service, the experience and judgment of the Major-General Commanding the Army have been heartily enlisted at all times; to his counsel and to the zeal and proficiency of the officers in charge of the several bureaus I am indebted.

DANIEL S. LAMONT,
Secretary of War.

APPENDIX.

1894.

REPORT OF THE SECRETARY OF WAR.

Statement of appropriations under direction of the War Department for the fiscal year ending June 30, 1894, showing the amount appropriated under each title of appropriation, the amount drawn by requisition upon the Treasury, and the balances subject to requisition July 1, 1894.

Title of appropriation.	Balance July 1, 1893.	Appropriated July 1, 1893, to June 30, 1894.	Repayments July 1, 1893, to June 30, 1894.	Aggregate available.	Payments July 1, 1893, to June 30, 1894.	Carried to surplus fund June 30, 1894.	Balance June 30, 1894.
SALARIES, CONTINGENCIES, ETC.							
Salaries, office of—							
.....	\$2,203.06	\$106,300.00	.....	\$106,503.06	\$98,132.00	\$1,643.06	\$8,785.91
.....	2,164.38	212,920.00	.....	215,084.38	212,143.33	909.36	2,031.67
.....	22.29	14,360.00	.....	14,382.29	14,087.31	.....	294.98
.....	74.35	14,860.00	.....	14,934.35	14,773.32	3.21	157.82
.....	4,625.98	158,940.00	.....	163,565.98	155,977.36	2,276.08	5,312.54
.....	302.77	42,760.00	.....	43,062.77	41,670.00	45.42	1,847.35
.....	1,535.52	186,866.00	.....	188,401.52	186,565.20	1,063.86	772.46
.....	3.87	39,180.00	.....	39,183.87	38,875.00	.....	288.87
.....	142.44	44,860.00	.....	45,002.44	44,832.33	96.15	78.96
.....	185.88	23,240.00	.....	23,425.88	23,200.00	87.55	118.11
.....	968.02	31,780.00	.....	32,748.02	31,275.00	494.14	1,018.83
.....	84,994.19	1,004,190.00	.....	1,089,184.19	924,636.80	18,970.19	183,868.40
.....	.....	5,700.00	.....	5,700.00	5,700.00	.....	.....
.....	49.79	47,000.00	.....	47,109.79	47,059.69	43.05	7.05
.....	8.29	500.00	.....	508.29	500.14	7.43	73
.....	6,797.04	55,000.00	.....	61,797.04	40,421.83	275.44	21,099.92
.....	1,050.00	600.00	.....	1,650.00	600.00	.....	190.00
.....	2,700.30	35,000.00	.....	37,700.30	22,724.57	18	14,975.55
.....	200.01	6,500.00	.....	6,700.01	6,500.00	100.01	100.00
.....	139.61	14,600.00	.....	14,739.61	14,735.37	.....	4.24
.....	.....	60,000.00	.....	60,000.00	60,000.00	.....	.....
.....	.....	17,858.00	.....	17,958.00	16,000.00	.....	1,958.00
Total salaries, contingent expenses, etc.	58,243.59	2,123,154.00	.....	2,181,397.59	2,000,614.99	18,874.17	161,906.43
MILITARY ESTABLISHMENT.							
.....	.....	1,750.00	.....	1,750.00	1,750.00	.....	.....
.....	21,739.12	130,000.00	.....	151,739.12	102,858.59	6,872.77	41,007.76
.....	60.63	3,000.00	.....	3,060.63	2,829.03	60.62	370.91
.....	5,808.28	15,000.00	.....	20,808.28	4,556.28	965.87	14,756.18
.....	609.55	22,000.00	.....	22,609.55	22,284.17	285.30	40.08
.....	1,200,246.57	13,256,789.78	.....	14,457,076.35	12,925,202.47	515,641.55	1,016,232.33
.....	140,074.59	1,700,000.00	.....	1,840,074.59	1,665,164.61	142,639.64	32,268.04
.....	580,868.76	2,525,000.00	.....	3,105,868.76	2,266,472.28	235,751.90	603,145.58
.....	61,046.72	650,000.00	.....	711,046.72	638,267.87	31,718.79	41,060.06
.....	89,749.23	700,000.00	.....	789,749.23	714,558.68	5,288.73	69,983.82

.....	718,008.27	2,000,000.00	.....	8,318,068.27	2,507,012.03	117,031.78	697,031.47
1, Pacific railroads.....	57,014.87	180,000.00	.....	130,000.01	130,809.01	.....	.....
.....	1,907.18	50,000.00	.....	187,014.87	101,909.50	44,780.90	40,845.47
.....	1,298.10	7,000.00	.....	51,907.13	49,454.28	1,504.36	948.49
.....	207.50	8,000.00	.....	8,208.10	7,678.28	127.57	494.25
Phosphen, Ga.....	16,500.00	.....	.....	8,207.50	7,670.60	200.27	330.83
.....	500.00	.....	.....	16,500.00	.....	.....	16,500.00
.....	257,339.99	2,200,000.00	.....	1,457,329.99	1,153,856.76	28,621.76	275,861.47
.....	19,953.83	185,500.00	.....	205,453.83	168,917.51	.....	36,636.32
.....	.....	7,000.00	.....	5,000.00	5,000.00	.....	.....
.....	3,708.25	11,000.00	.....	7,000.00	7,000.00	.....	.....
.....	565.59	495,000.00	.....	13,703.25	8,000.00	.....	8,700.00
.....	10.28	80,000.00	.....	495,565.59	478,458.99	570.43	18,596.17
.....	244,783.05	8,118.20	.....	90,010.28	79,012.15	10.28	87.85
.....	174,021.29	400,000.00	.....	352,849.25	67,497.69	.....	295,351.56
.....	54,406.13	232,115.08	.....	574,021.29	214,618.28	.....	359,408.01
.....	4,496.87	79,887.85	.....	296,521.29	225,009.00	.....	30,916.86
.....	474.68	25,737.50	.....	84,314.72	79,875.55	.....	.....
.....	57.67	.....	.....	28,212.18	25,737.50	474.68	12.30
.....	.....	.....	.....	87.67	.....	87.67	.....
Total military establishment.....	3,753,402.86	24,667,705.43	.....	28,421,168.26	23,065,156.16	1,168,386.77	2,567,025.35
PUBLIC WORKS.							
Buildings and grounds, Military Academy.							
.....	46,557.92	90,005.00	.....	196,633.61	122,496.00	61.92	14,065.00
.....	323,220.19	.....	.....	323,220.19	735,000.00	.....	188,230.19
Total buildings and grounds, Military Academy.....	369,778.11	90,005.00	.....	469,843.80	257,496.00	61.92	202,285.08
Arenas.							
.....	7,529.92	8,750.00	.....	16,279.92	8,750.00	.....	7,529.92
.....	.....	20,000.00	.....	20,000.00	20,000.00	.....	.....
.....	.....	2,000.00	.....	2,000.00	2,000.00	.....	.....
.....	.....	5,000.00	.....	5,000.00	5,000.00	.....	.....
.....	.....	5,000.00	.....	5,000.00	5,000.00	.....	.....
.....	.....	11,000.00	.....	11,000.00	11,000.00	.....	.....
.....	32,146.92	10,000.00	.....	42,146.92	39,831.60	.....	2,315.32
1, West Troy, N. Y.....	98,859.03	40,000.00	.....	98,859.03	51,000.30	.....	42,858.73
.....	3,370.00	.....	.....	43,370.00	33,000.00	.....	20,370.00
.....	51,000.00	96,650.00	.....	147,650.00	120,481.16	.....	27,168.84
.....	48.79	45,000.00	.....	45,048.79	44,989.71	48.79	10.29
.....	19,299.92	.....	.....	19,299.92	.....	.....	.....
.....	7,520.84	37,500.00	.....	45,000.84	34,865.63	.....	19,299.92
.....	10,000.00	10,000.00	10,000.00	10,325.21
Total arenas.....	214,843.43	290,900.00	505,743.42	375,918.40	48.79	129,778.23

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PUBLIC WORKS—continued.							
Fortifications.							
.....	96,000.00	96,000.00	96,000.00
.....	3,018,656.94	81,638,405.00	4,056,061.94	42,774,842.28	1,880,413.68
.....	25,204.48	45,000.00	70,204.48	62,849.64	7,354.82
.....	37,400.00	37,400.00	37,400.00
.....	300,288.99	125,000.00	425,288.99	189,957.05	235,332.94
.....	28,470.77	28,470.77	28,470.77
Board on fortifications or other defenses.	2,600.00	2,600.00	2,600.00
Board on Pacific coast gun factory	5,000.00	5,000.00	6,800.00	130,988.63
Plans for fortifications	270,585.70	270,585.70	145,577.07
Torpedoes for harbor defense	221.50	221.50
Mountain guns	20,167.60	20,167.60
Machine guns	20,600.00	20,600.00	11,660.29	20,000.00
Ammunition for machine and averaging gun	15,000.00	15,000.00	8,930.71
.....	2,429.43	6,000.00	8,429.43	6,988.11	15,000.00
.....	587,361.45	587,361.45	587,361.45
.....	4,750.25	4,750.25	3,750.00	1,000.25
.....	297.94	297.94	297.94
.....	26,122.90	175,000.00	201,122.90	148,534.10	52,788.80
.....	704,453.83	50,000.00	844,453.83	596,429.02	248,024.81
.....	100.28	100.28	100.28
.....	8,787.22	8,787.22	2,800.00	5,987.22
Total fortifications	5,152,530.89	2,065,005.00	7,218,535.89	3,947,863.56	2,818.09	3,207,853.17
Buildings and grounds in and around Washington, etc.							
.....	421.09	44,200.00	44,621.09	42,889.46	121.09	600.56
.....	28.07	27,000.00	27,028.07	26,957.77	26.82	1,043.48
.....	26.44	15,022.00	15,048.44	14,892.24	26.44	129.76
.....	12.70	2,500.00	2,512.70	2,481.55	13.70	18.45
the Departments and the	1,250.00	1,250.00	1,250.00
Monument	322.60	11,520.00	11,842.60	11,467.57	322.60	33.43
deposits within the harbor	5,900.00	5,900.00	5,900.00
.....	2,611.53	23,000.00	26,011.53	24,548.40	1,908.53	64.54
.....	51.98	100.00	153.58	51.98	101.60
.....	1,583.41	19,000.00	20,583.41	18,999.96	1,583.41
.....	12,500.00	12,500.00	12,500.00

Public.....	2,137.00	2,137.00	250.91	1,790.89
.....	50,854.13	50,854.13	50,854.13
.....	10,000.01	10,000.01	10,000.01
.....	428,985.54	428,985.54	1,539.10	427,445.39
.....	00,000.00
.....	60,000.00	60,000.00	10,000.00	1,958.00
.....	17,058.00	17,058.00
Total, buildings and grounds in and around Washington	503 806.29	244,050.00	1.00	747,857.89	243,906.90	2,501.41	501,089.53	
Repayments in excess of payments.....	.....	.....	.....	.....	1.00	.....	.....
Actual expenditures .....	.....	.....	.....	.....	243,905.96	.....	.....
Military posts.								
.....	28,340.80	.....	.....	28,340.80	.....	.....	28,336.61
.....	24,902.10	.....	.....	24,902.10	.....	4.19	24,902.10
.....	115.78	.....	.....	115.78	.....	.....	115.78
.....	2,958.15	.....	.....	2,958.15	.....	.....	2,958.15
.....	100,000.00	.....	.....	100,000.00	.....	.....	100,000.00
.....	30,000.00	30,000.00	.....	00,000.00	23,000.00	.....	35,000.00
.....	900.00	.....	.....	900.00	700.00	.....	200.00
.....	471.90	.....	.....	471.90	471.90	.....	.....
.....	328,601.55	350,000.00	.....	676,601.55	572,465.12	.....	104,136.43
.....	71,733.54	.....	.....	71,733.54	71,733.54	.....	.....
.....	15,004.86	.....	.....	15,004.86	.....	.....	15,004.86
.....	13,339.51	.....	.....	13,339.51	.....	.....	13,339.51
.....	829.31	.....	.....	829.31	829.31	.....	.....
.....	75,000.00	.....	.....	75,000.00	.....	.....	75,000.00
.....	15,000.00	.....	.....	15,000.00	.....	.....	15,000.00
.....	174,850.00	.....	.....	174,850.00	174,850.00	.....	.....
.....	100,000.00	.....	.....	100,000.00	12,000.00	.....	88,000.00
.....	20,000.00	.....	.....	20,000.00	20,000.00	.....	.....
.....	.....	.....	0.33	9.33	.....	0.33	.....
.....	0,977.48	.....	.....	0,977.48	.....	.....	0,977.48
.....	717.58	30,000.00	.....	30,717.58	30,717.58	.....	.....
.....	97,108.25	100,000.00	.....	197,108.25	143,572.84	.....	53,535.41
.....	.....	7,000.00	.....	7,000.00	.....	.....	7,000.00
Total military posts.....	1,187,910.81	517,000.00	0.33	1,684,920.14	1,052,344.48	9.33	632,565.33	
Repayment in excess of payments .....	.....	.....	.....	.....	9.33	.....	.....
Actual expenditures .....	.....	.....	.....	.....	1,052,335.15	.....	.....
Harbors and Rivers.								
Improving harbor at—	.....	.....	.....	.....	.....	.....	.....
Belfast, Me.....	5,000.00	.....	.....	5,000.00	5,000.00	.....	.....
Rockland, Me.....	20,000.00	.....	.....	20,000.00	20,000.00	.....	.....
York, Me.....	8,000.00	.....	.....	8,000.00	8,000.00	.....	.....
Breakwater from Mount Desert to Porcupine Islands, Me	35,000.00	.....	.....	35,000.00	30,000.00	.....	35,000.00

CONDEMNATION OF LANDS.

In executing the various laws requiring the purchase of land for military objects it frequently occurs that the prices demanded by owners are clearly unreasonable, in the judgment of the officers in charge. In such cases resort must be had to the rules prescribed by the statutes, and the result is so generally unfavorable to the Government as to justify the statement of a single but not exceptional experience of this Department.

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PUBLIC WORKS—continued							
Harbors and Rivers—Continued.							
Improving harbor at—							
Savannah, Ga.....	\$650,000.00			\$650,000.00	\$600,000.00		\$250,000.00
Key West, Fla.....	50,000.00			50,000.00	50,000.00		
Pensacola, Fla.....	45,000.00			45,000.00	45,000.00		
Mobile, Ala.....	537,500.00			537,500.00	475,000.00		125,000.00
Greenville, Miss.....	5,000.00			5,000.00	5,000.00		
Vicksburg, Miss.....	40,000.00			40,000.00	40,000.00		
Natches and Vidalia, Miss. and La.....	75,000.00			75,000.00			75,000.00
Improving channel in West Galveston Bay, Tex.....	7,500.00			7,500.00			7,500.00
Improving harbor at—	63,000.00			63,000.00	46,000.00		15,000.00
Brazos, Santiago, Tex.....	56,855.00			56,855.00			56,855.00
Galveston, Tex.....	1,390,118.00			1,390,118.00	1,045,272.70		344,845.30
Ashabula, Ohio.....	68,000.00			68,000.00	68,000.00		
Black River, Ohio.....	16,100.00			16,100.00	16,100.00		
Cleveland, Ohio.....	88,795.81			88,795.81	88,795.31		
Fairport, Ohio.....	34,000.00			34,000.00	29,200.00		4,800.00
Huron, Ohio.....	74,750.00			74,750.00	14,750.00		
Port Clinton, Ohio.....	2,700.00			2,700.00	5,000.00		4,700.00
Sandusky City, Ohio.....	43,137.00			43,137.00	21,112.00		22,025.00
Toledo, Ohio.....	188,000.00			188,000.00	81,500.00		106,500.00
Conneaut, Ohio.....	39,800.00			39,800.00	33,300.00		
Michigan City, Ind.....	48,141.72			48,141.72	35,641.72		12,500.00
Calumet, Ill.....	9,000.00			9,000.00	4,000.00		5,000.00
Waukegan, Ill.....	25,000.00			25,000.00	22,000.00		3,000.00
Chicago, Ill.....	59,000.00			59,000.00	34,000.00		25,000.00
St. Louis, Mo.....	31,000.00			31,000.00			31,000.00
	28,450.00			28,450.00	23,000.00		5,450.00
	4,000.00			4,000.00	4,000.00		
	175,000.00			175,000.00	45,000.00		130,000.00
Mich.....	2,286.33			2,286.33	203.58		2,082.75
Harbor of Cedar River, Mich.....	1,500.00			1,500.00			1,500.00
	5,000.00			5,000.00	4,000.00		1,000.00
Black Lake, Mich.....	10,000.00			10,000.00	8,000.00		2,000.00
Charlevoix, Mich.....	5,000.00			5,000.00	2,000.00		3,000.00
Frankfort, Mich.....	88,566.89			88,566.89	63,666.89		25,000.00
Grand Haven, Mich.....	30,000.00			30,000.00	28,000.00		2,000.00
Manistee, Mich.....							

become one of the permanent memorial structures of the capital. Historical associations and natural beauty give the site unsurpassed value for such a purpose.

RECORD AND PENSION OFFICE.

Index record cards of all the volunteer organizations of the civil war, of hospital muster rolls, rolls of deserters arrested, many miscellaneous rolls, and company descriptive books have been completed, and work on regimental descriptive books is in progress. All military records relating to the personnel or operations of the armies of the wars of the Revolution and of 1812 are being transferred to the office, and they will be reproduced by the index record card system as rapidly as possible. The total number of cases disposed of was 219,941, of which 170,301 were pension cases. During the year 6,024,667 military and 2,727 medical cards were added to the record, making a total of 41,127,149 cards available for current work. The completion of much of the work in which the office has been engaged has permitted a reduction of 292 in the clerical force, at an annual saving of \$334,200.

WAR RECORDS.

The publication of the official records of the rebellion brings the work down to the opening of the final campaign, and volumes covering operations culminating at Appomattox are in type. Thirty-one of the 35 parts of the Atlas have been issued. Such progress has been made that if no unforeseen delay occurs the volumes remaining to complete the publication will be in the hands of the printer by the close of the fiscal year. The publication, complete, will consist of 11,444 sets, each of 120 volumes, with probably 4 supplementary volumes. Since 1874 there have been appropriated \$2,156,343 for the work, and it is estimated that \$469,000 will be required to finish it.

In the administration of the affairs of the Department and in the prosecution of plans to promote the good of the service, the experience and judgment of the Major-General Commanding the Army have been heartily enlisted at all times; to his counsel and to the zeal and proficiency of the officers in charge of the several bureaus I am indebted.

DANIEL S. LAMONT,
Secretary of War.

APPENDIX.

1894.

Pacific railroads.....	718,088.27	2,000,000.00	.....	8,318,088.27	2,507,612.02	117,891.78	697,831.47
.....	57,014.87	180,809.01	.....	130,809.01	129,849.01	.....	.....
.....	1,907.13	50,000.00	.....	51,907.13	49,454.28	44,759.90	40,945.47
.....	1,298.10	7,000.00	.....	8,298.10	7,676.28	1,504.36	848.49
.....	207.50	8,000.00	.....	8,207.50	7,670.00	127.57	494.25
.....	16,500.00	.....	.....	16,500.00	.....	206.27	330.63
.....	500.00	.....	.....	500.00	.....	.....	18,500.00
.....	257,339.99	1,200,000.00	.....	1,457,339.99	1,153,856.76	28,621.76	500.00
.....	19,963.83	185,500.00	.....	205,453.83	198,817.51	.....	275,301.47
.....	.....	5,000.00	.....	5,000.00	5,000.00	.....	86,636.32
.....	.....	7,000.00	.....	7,000.00	7,000.00	.....	.....
.....	2,709.25	11,000.00	.....	13,709.25	8,000.00	.....	.....
.....	565.59	495,000.00	.....	495,565.59	476,458.99	.....	5,700.00
.....	10.26	80,000.00	.....	80,010.26	79,012.15	.....	18,698.17
.....	844,723.05	8,116.20	.....	852,839.25	67,497.00	.....	510.43
.....	174,021.29	400,000.00	.....	574,021.29	214,618.28	.....	10.26
.....	54,406.18	233,115.00	.....	287,521.29	225,009.00	.....	.....
.....	4,428.67	79,887.85	.....	84,316.72	79,875.55	.....	285,351.56
.....	474.69	25,737.50	.....	26,212.18	25,737.50	.....	359,408.01
.....	87.67	.....	.....	87.67	.....	.....	30,916.66
.....	.....	.....	.....	.....	.....	.....	4,420.87
.....	.....	.....	.....	.....	.....	.....	474.68
.....	.....	.....	.....	.....	.....	.....	87.67
Total military establishment.....	3,753,462.86	24,607,705.42	.....	28,421,108.28	23,065,156.16	1,168,390.77	3,587,025.35
PUBLIC WORKS.							
Buildings and grounds, Military Academy.							
Buildings and grounds, Military Academy.....	46,587.92	90,065.69	.....	136,653.61	122,406.00	61.93	14,065.69
New academic building, Military Academy.....	823,220.19	.....	.....	323,220.19	135,000.00	.....	188,220.19
Total buildings and grounds, Military Academy.....	869,778.11	90,065.69	.....	459,873.80	257,406.00	61.92	202,285.88
Arsenals.							
.....	7,529.92	8,750.00	.....	16,279.92	8,750.00	.....	7,529.92
.....	.....	20,000.00	.....	20,000.00	20,000.00	.....	.....
.....	.....	2,000.00	.....	2,000.00	2,000.00	.....	.....
.....	.....	5,000.00	.....	5,000.00	5,000.00	.....	.....
.....	.....	5,000.00	.....	5,000.00	5,000.00	.....	.....
.....	.....	11,000.00	.....	11,000.00	11,000.00	.....	.....
.....	.....	10,000.00	.....	42,146.92	39,831.60	.....	2,815.32
.....	32,146.92	.....	.....	93,859.03	51,000.30	.....	42,858.73
.....	93,859.03	40,000.00	.....	43,870.00	23,000.00	.....	20,870.00
.....	8,870.00	50,000.00	.....	147,650.00	120,481.16	.....	27,168.84
.....	51,000.00	96,650.00	.....	45,046.79	44,989.71	46.79	10.29
.....	46.79	45,000.00	.....	19,268.92	.....	.....	18,268.92
.....	19,268.92	37,500.00	.....	45,000.84	34,865.63	.....	10,225.21
.....	7,580.84	10,000.00	.....	10,000.00	10,000.00	.....	.....
Total arsenals.....	214,843.42	290,900.00	.....	505,743.42	375,918.40	46.79	129,778.23

epublia.....	2,137.09	.....	.....	2,137.09	.....	360.61	.....	.....	1,792.38
ite.....	50,354.13	.....	.....	50,354.13	.....	.....	.....	.....	50,354.13
a.....	10,000.91	.....	.....	10,000.91	.....	.....	.....	.....	10,000.91
Columbia.....	428,985.54	.....	.....	428,985.54	.....	1,038.10	.....	.....	427,440.89
	.....	60,000.00	.....	60,000.00	.....	60,000.00	.....	.....	1,906.00
	.....	17,958.00	.....	17,958.00	.....	16,000.00	.....	.....	.....
Total, buildings and grounds in and around Washington.....	503,506.20	244,050.00	1.60	747,557.80	243,904.96	2,501.41	.....	501,038.52	.....
Repayments in excess of payments.....	.....	.....	.....	.....	1.60	.....	.....	.....	.....
Actual expenditures.....	.....	.....	.....	.....	243,905.96	.....	.....	.....	.....
Military posts.									
.....	28,340.80	.....	.....	28,340.80	.....	4.19	.....	28,336.61	.....
.....	24,902.10	.....	.....	24,902.10	.....	.....	.....	24,902.10	.....
.....	115.78	.....	.....	115.78	.....	.....	.....	115.78	.....
.....	2,958.15	.....	.....	2,958.15	.....	.....	.....	2,958.15	.....
.....	160,000.00	.....	.....	160,000.00	.....	.....	.....	160,000.00	.....
.....	30,000.00	30,000.00	.....	60,000.00	25,000.00	.....	.....	35,000.00	.....
ration, Me.....	900.00	.....	.....	900.00	700.00	.....	.....	200.00	.....
.....	471.90	.....	.....	471.90	471.90	.....	.....	.....	.....
.....	328,601.55	350,000.00	.....	678,601.55	672,465.12	.....	.....	204,136.43	.....
.....	71,733.54	.....	.....	71,733.54	71,733.54	.....	.....	.....	.....
.....	15,004.85	.....	.....	15,004.85	.....	.....	.....	15,004.85	.....
.....	13,339.51	.....	.....	13,339.51	.....	.....	.....	13,339.51	.....
.....	820.31	.....	.....	820.31	820.31	.....	.....	.....	.....
.....	75,000.00	.....	.....	75,000.00	.....	.....	.....	75,000.00	.....
.....	15,000.00	.....	.....	15,000.00	.....	.....	.....	15,000.00	.....
.....	174,850.00	.....	.....	174,850.00	174,850.00	.....	.....	88,000.00	.....
.....	160,000.00	.....	.....	160,000.00	12,000.00	.....	.....	.....	.....
.....	20,000.00	.....	.....	20,000.00	20,000.00	.....	.....	.....	.....
.....	.....	.....	9.33	9.33	.....	0.33	.....	.....	.....
.....	9,977.48	.....	.....	9,977.48	.....	.....	.....	9,977.48	.....
.....	717.58	30,000.00	.....	30,717.58	80,717.58	.....	.....	53,505.41	.....
.....	97,188.25	100,000.00	.....	197,188.25	143,572.84	.....	.....	7,000.00	.....
.....	.....	7,000.00	.....	7,000.00	.....	.....	.....	.....	.....
Total military posts.....	1,167,910.81	517,000.00	9.33	1,684,920.14	1,052,344.48	9.33	.....	632,568.33	.....
Repayment in excess of payments.....	.....	.....	.....	.....	9.33	.....	.....	.....	.....
Actual expenditures.....	.....	.....	.....	.....	1,052,335.15	.....	.....	.....	.....
Harbors and Rivers.									
Improving harbor at—									
Belfast, Me.....	5,000.00	.....	.....	5,000.00	5,000.00	.....	.....	.....	.....
Rockland, Me.....	20,000.00	.....	.....	20,000.00	20,000.00	.....	.....	.....	.....
York, Me.....	8,000.00	.....	.....	8,000.00	8,000.00	.....	.....	.....	.....
Breakwater from Mount Desert to Porcupine Islands, Me.....	95,000.00	.....	.....	95,000.00	90,000.00	.....	.....	35,000.00	.....

Statement of appropriations under direction of the War Department for the fiscal year ending June 30, 1894, etc.—Continued.

Title of appropriation.	Balances July 1, 1893.	Appropriated July 1, 1893, to June 30, 1894.	Repayments July 1, 1893, to June 30, 1894.	Aggregate available.	Payments July 1, 1893, to June 30, 1894.	Carried to surplus fund June 30, 1894.	Balance June 30, 1894.
PUBLIC WORKS—continued.							
Harbors and Rivers—Continued.							
Improving harbor at—							
Portland, Me.....	\$25,000.00			\$25,000.00	\$1,000.00		\$24,000.00
Camden, Me.....	11,000.00			11,000.00	11,000.00		
Improving channel in Back Cove, Portland, Me.....	19,000.00			19,000.00			19,000.00
Improving harbor at Portsmouth, N. H.....	4,432.39			4,432.39			4,432.39
Harbor of refuge at Little Harbor, N. H.....	47,000.00			47,000.00	42,000.00		5,000.00
Improving harbor at—							
Burlington, Vt.....	15,000.00			15,000.00			15,000.00
Swanton, Vt.....	828.93			828.93			828.93
Boston, Mass.....	316,400.00			316,400.00	176,000.00		139,500.00
Hyannis, Mass.....	3,500.00			3,500.00	3,500.00		
Gloucester, Mass.....	42,500.00			42,500.00	23,500.00		19,000.00
Harbor of refuge, Sandy Bay, Cape Ann, Mass.....	185,000.00			125,000.00	105,000.00		80,000.00
Improving harbor at—							
Lynn, Mass.....	15,000.00			15,000.00	15,000.00		
Manchester, Mass.....	6,800.00			6,800.00	6,800.00		
Nantucket, Mass.....	23,100.00			23,100.00	7,000.00		16,100.00
Newburyport, Mass.....	25,000.00			25,000.00	18,000.00		7,000.00
New Bedford, Mass.....	4,800.00			4,800.00	4,800.00		
Plymouth, Mass.....	5,500.00			5,500.00	4,000.00		1,500.00
Provincetown, Mass.....	3,500.00			3,500.00			3,500.00
Scituate, Mass.....	5,000.00			5,000.00	5,000.00		
Salem, Mass.....	14,000.00			14,000.00	5,000.00		9,000.00
Vineyard Haven, Mass.....	4,100.00			4,100.00	4,100.00		
Wareham, Mass.....	5,400.00			5,400.00	5,400.00		
.....	4,000.00			4,000.00			4,000.00
.....	9,000.00			9,000.00	9,000.00		
.....	3,300.00			3,300.00	3,300.00		
R. I.....	174,100.00			174,100.00	108,100.00		66,000.00
Island, R. I.....	.60			.60	.10		.50
.....	19,700.00			19,700.00	19,700.00		
.....	24,300.00			24,300.00	23,800.00		1,500.00
Sh Pond, R. I.....	7,300.00		\$47.88	7,347.88			7,347.88
.....	62,660.18			62,660.18	60,160.18		2,500.00
Shor, Conn.....	27,500.00			27,500.00	26,000.00		1,500.00
Improving harbor at—							
Black Rock, Conn.....	4,900.00			4,900.00	4,900.00		
Five Mile River, Conn.....	5,038.68			5,038.68	5,038.68		

Stonington, Conn.....	11,500.00	11,500.00	700.00	10,800.00
Stamford, Conn.....	9,720.44	9,720.44	9,720.44	
Wilson's Point, Conn.....	1,321.10	1,321.10	500.00	821.10
N. Y.....	104,837.00	104,837.00	104,837.00	
Staten Island and New Jersey, New York.....	550.00	550.00		550.00
Staten Island and New Jersey, New York.....	3,950.00	3,950.00	3,950.00	
Staten Island and New Jersey, New York.....	276,921.95	276,921.95	204,300.00	72,621.95
Staten Island and New Jersey, New York.....	500.00	500.00	500.00	
Bay, N. Y.....	15,000.00	15,000.00	3,500.00	11,500.00
Bay, N. Y.....	188,600.00	188,600.00	108,800.00	80,000.00
Ordnance, N. Y.....	9,000.00	9,000.00	7,000.00	2,000.00
Ordnance, N. Y.....	15,498.41	15,498.41	14,000.00	1,498.41
Ordnance, N. Y.....	2,000.00	2,000.00	2,000.00	
Ordnance, N. Y.....	7,000.00	7,000.00	5,722.15	1,277.85
Ordnance, N. Y.....	1,000.00	1,000.00	1,000.00	
Ordnance, N. Y.....	120.95	120.95		120.95
Ordnance, N. Y.....	4,000.00	4,000.00	4,000.00	
Ordnance, N. Y.....	34,500.00	34,500.00	34,500.00	
Ordnance, N. Y.....	4,000.00	4,000.00		4,000.00
Ordnance, N. Y.....	15,000.00	15,000.00	9,000.00	6,000.00
Ordnance, N. Y.....	1,500.00	1,500.00	1,500.00	
Ordnance, N. Y.....	12,374.76	12,374.76	11,374.76	1,000.00
Ordnance, N. Y.....	65,500.00	65,500.00	44,500.00	19,000.00
Ordnance, N. Y.....	79,000.00	79,000.00	61,000.00	18,000.00
Ordnance, N. Y.....	220.55	220.55		220.55
Ordnance, N. Y.....	3,400.00	3,400.00	3,400.00	
Ordnance, N. Y.....	2,700.00	2,700.00	2,700.00	
Ordnance, N. Y.....	1,072,500.00	1,072,500.00	756,500.00	316,000.00
Ordnance, N. Y.....	58,298.62	58,298.62	11,000.00	47,298.62
Ordnance, N. Y.....	3,000.00	3,000.00	52.61	2,947.39
Ordnance, N. Y.....	3,583.00	3,583.00	3,583.00	
Ordnance, N. Y.....	16,236.93	16,236.93		16,236.93
Ordnance, N. Y.....	20,000.00	20,000.00	18,000.00	2,000.00
Ordnance, N. Y.....	734.08	734.08		734.08
Ordnance, N. Y.....	1,524.58	1,524.58		1,524.58
Ordnance, N. Y.....	9,737.00	9,737.00	3,000.00	6,737.00
Ordnance, N. Y.....	10,000.00	10,000.00		10,000.00
Ordnance, N. Y.....	6,511.00	6,511.00	6,511.00	
Ordnance, N. Y.....	12,400.00	12,400.00	4,500.00	7,900.00
Ordnance, N. Y.....	2,447.41	2,447.41		2,447.41
Ordnance, N. Y.....	7,447.00	7,447.00	447.00	7,000.00
Ordnance, N. Y.....	9,500.00	9,500.00	3,500.00	6,000.00
Ordnance, N. Y.....	585,000.00	585,000.00	320,000.00	265,000.00
Ordnance, N. Y.....	70,000.00	70,000.00	45,000.00	25,000.00
Ordnance, N. Y.....	100,000.00	100,000.00		100,000.00

Statement of appropriations under direction of the War Department for the fiscal year ending June 30, 1894, etc.—Continued.

Title of appropriation.	Balance July 1, 1893.	Appropriated July 1, 1893, to June 30, 1894.	Repayments July 1, 1893, to June 30, 1894.	Balance June 30, 1894.
PUBLIC WORKS—continued.				
Harbors and Rivers—Continued.				
Improving harbor at—				
Savannah, Ga.....	\$850,000.00	.....	.....	\$850,000.00
Key West, Fla.....	50,000.00	.....	.....	50,000.00
Pensacola, Fla.....	45,000.00	.....	.....	45,000.00
Mobile, Ala.....	557,500.00	.....	.....	557,500.00
Greenville, Miss.....	5,000.00	.....	.....	5,000.00
Vicksburg, Miss.....	40,000.00	.....	.....	40,000.00
Natchez and Vidalia, Miss. and La.....	75,000.00	.....	.....	75,000.00
Improving channel in West Galveston Bay, Tex.....	7,500.00	.....	.....	7,500.00
Improving ship channel in Galveston Bay, Tex.....	63,000.00	.....	.....	63,000.00
Improving harbor at—				
Brazos, Santiago, Tex.....	56,855.00	.....	.....	56,855.00
Galveston, Tex.....	1,390,118.00	.....	.....	1,390,118.00
Ashabula, Ohio.....	69,000.00	.....	.....	69,000.00
Black River, Ohio.....	18,100.00	.....	.....	18,100.00
Cleveland, Ohio.....	68,795.31	.....	.....	68,795.31
Fairport, Ohio.....	34,000.00	.....	.....	34,000.00
Euron, Ohio.....	14,750.00	.....	.....	14,750.00
Port Clinton, Ohio.....	9,700.00	.....	.....	9,700.00
Sandusky City, Ohio.....	43,137.00	.....	.....	43,137.00
Toledo, Ohio.....	186,000.00	.....	.....	186,000.00
Conneaut, Ohio.....	39,300.00	.....	.....	39,300.00
Michigan City, Ind.....	48,141.72	.....	.....	48,141.72
Calumet Ill.....	9,000.00	.....	.....	9,000.00
.....	25,000.00	.....	.....	25,000.00
.....	50,000.00	.....	.....	50,000.00
.....	31,000.00	.....	.....	31,000.00
.....	28,450.00	.....	.....	28,450.00
.....	4,000.00	.....	.....	4,000.00
.....	175,000.00	.....	.....	175,000.00
Mich.....	2,286.33	.....	.....	2,286.33
Box of Cedar River, Mich.....	1,500.00	.....	.....	1,500.00
.....	5,000.00	.....	.....	5,000.00
.....	10,000.00	.....	.....	10,000.00
.....	5,000.00	.....	.....	5,000.00
.....	89,666.69	.....	.....	89,666.69
.....	30,000.00	.....	.....	30,000.00
Charlevoix, Mich.....	.....	.....	.....	.....
Frankfort, Mich.....	.....	.....	.....	.....
Grand Haven, Mich.....	.....	.....	.....	.....
Marquette, Mich.....	.....	.....	.....	.....

.....	17, 935. 00	.....	17, 935. 00	.....	.....	.....	17, 935. 00
.....	0, 500. 00	.....	0, 500. 00	.....	.....	.....	0, 500. 00
.....	2, 000. 00	.....	2, 000. 00	.....	.....	.....	2, 000. 00
.....	37, 900. 00	.....	37, 900. 00	.....	.....	.....	37, 900. 00
.....	9, 600. 00	.....	9, 600. 00	.....	.....	.....	9, 600. 00
.....	55, 000. 00	.....	55, 000. 00	.....	.....	.....	55, 000. 00
.....	20, 000. 00	.....	20, 000. 00	.....	.....	.....	20, 000. 00
.....	0, 000. 00	.....	0, 000. 00	.....	.....	.....	0, 000. 00
.....	35, 000. 00	.....	35, 000. 00	.....	.....	.....	35, 000. 00
.....	42, 000. 00	.....	42, 000. 00	.....	.....	.....	42, 000. 00
.....	8, 000. 00	.....	8, 000. 00	.....	.....	.....	8, 000. 00
.....	5, 000. 00	.....	5, 000. 00	.....	.....	.....	5, 000. 00
.....	1, 000. 00	.....	1, 000. 00	.....	.....	.....	1, 000. 00
.....	1, 106. 50	.....	1, 106. 50	.....	.....	.....	1, 106. 50
.....	82, 500. 00	.....	82, 500. 00	.....	.....	.....	82, 500. 00
.....	2, 500. 00	.....	2, 500. 00	.....	.....	.....	2, 500. 00
.....	45. 92	.....	45. 92	.....	.....	.....	45. 92
Bay, Wis.	.....	.....	.....	.....	.....	.....	.....
of Sturgeon Bay Canal, Wis.	.....	.....	.....	.....	.....	.....	.....
it Superior, Wis.	.....	.....	.....	.....	.....	.....	.....
.....	5, 000. 00	.....	5, 000. 00	.....	.....	.....	5, 000. 00
.....	44, 400. 00	.....	44, 400. 00	.....	.....	.....	44, 400. 00
.....	23, 000. 00	.....	23, 000. 00	.....	.....	.....	23, 000. 00
.....	15, 500. 00	.....	15, 500. 00	.....	.....	.....	15, 500. 00
.....	18, 000. 00	.....	18, 000. 00	.....	.....	.....	18, 000. 00
.....	26, 000. 00	.....	26, 000. 00	.....	.....	.....	26, 000. 00
.....	2, 000. 00	.....	2, 000. 00	.....	.....	.....	2, 000. 00
.....	3, 000. 00	.....	3, 000. 00	.....	.....	.....	3, 000. 00
.....	500. 00	.....	500. 00	.....	.....	.....	500. 00
.....	22, 000. 00	.....	22, 000. 00	.....	.....	.....	22, 000. 00
.....	79, 400. 00	.....	79, 400. 00	.....	.....	.....	79, 400. 00
.....	15, 000. 00	.....	15, 000. 00	.....	.....	.....	15, 000. 00
.....	1, 000. 00	.....	1, 000. 00	.....	.....	.....	1, 000. 00
.....	4, 503. 90	.....	4, 503. 90	.....	.....	.....	4, 503. 90
.....	24, 000. 00	.....	24, 000. 00	.....	.....	.....	24, 000. 00
.....	25, 000. 00	.....	25, 000. 00	.....	.....	.....	25, 000. 00
.....	10, 000. 00	.....	10, 000. 00	.....	.....	.....	10, 000. 00
.....	81, 709. 80	.....	81, 709. 80	.....	.....	.....	81, 709. 80
.....	140, 858. 52	.....	140, 858. 52	.....	.....	.....	140, 858. 52
.....	636, 000. 00	.....	636, 000. 00	.....	.....	.....	636, 000. 00
Breakwater and harbor of refuge between Straits of Fuca and San Francisco, Cal.	.....	.....	.....	.....	.....	.....	.....
Improving Humboldt Harbor and Bay, Cal.	.....	.....	.....	.....	.....	.....	.....
Improving harbor at—	.....	.....	.....	.....	.....	.....	.....
Oakland, Cal.	.....	.....	.....	.....	.....	.....	.....
Wilmington, Cal.	.....	.....	.....	.....	.....	.....	.....
San Louis Obispo, Cal.	.....	.....	.....	.....	.....	.....	.....
San Diego, Cal.	.....	.....	.....	.....	.....	.....	.....
San Francisco, Cal.	.....	.....	.....	.....	.....	.....	.....
Survey of—	.....	.....	.....	.....	.....	.....	.....
Pacific coast between points Drums and Capistrano, Cal.	.....	.....	.....	.....	.....	.....	.....
San Francisco Harbor, San Pablo and Suisun bays, Straits of Carquinez, and mouth of San Joaquin and Sacramento rivers, Cal.	.....	.....	.....	.....	.....	.....	.....
.....	2, 350. 00	.....	2, 350. 00	.....	.....	.....	2, 350. 00
.....	1, 000. 00	.....	1, 000. 00	.....	.....	.....	1, 000. 00

REPORT OF THE SECRETARY OF WAR.

Statement of appropriations under direction of the War Department for the fiscal year ending June 30, 1894, etc.—Continued.

Title of appropriation.	Balance, July 1, 1893.	Appropriated, July 1, 1893, to June 30, 1894.	Repayments, July 1, 1893, to June 30, 1894.	Aggregate available.	Payments, July 1, 1893, to June 30, 1894.	Carried to surplus fund, June 30, 1894.	Balance June 30, 1894.
PUBLIC WORKS—continued.							
Harbors and Rivers—Continued.							
Improving—							
Entrance to Coos Bay and Harbor, Oreg.	\$127,994.76			\$127,994.76	\$121,994.76		\$6,000.00
" " " " " " " "	30,000.00			30,000.00	25,500.00		4,500.00
" " " " " " " "	9,000.00			9,000.00	5,000.00		4,000.00
" " " " " " " "	9,584.92			9,584.92			9,584.92
River, Wash.	29,000.00			29,000.00	29,000.00		
" " " " " " " "	24,000.00			24,000.00	24,000.00		
of the Great Lakes between Chicago,	1,225,000.00			1,225,000.00	410,000.00		815,000.00
Me.	20,000.00			20,000.00	16,000.00		5,000.00
" " " " " " " "	10,800.00			10,800.00	10,800.00		
" " " " " " " "	25,000.00			25,000.00	5,000.00		20,000.00
" " " " " " " "	1,507.50			1,507.50			1,507.50
" " " " " " " "	75,000.00			75,000.00	45,000.00		30,000.00
" " " " " " " "	40,000.00			40,000.00	15,000.00		25,000.00
" " " " " " " "	6,500.00			6,500.00			6,500.00
" " " " " " " "	25,000.00			25,000.00	11,000.00		14,000.00
" " " " " " " "	35,000.00			35,000.00			35,000.00
" " " " " " " "	7,500.00			7,500.00			7,500.00
" " " " " " " "	15,000.00			15,000.00	5,000.00		10,000.00
" " " " " " " "	8,860.00			8,860.00	8,950.00		
" " " " " " " "	4,795.00			4,795.00			4,795.00
" " " " " " " "	6,400.00			6,400.00	1,500.00		4,900.00
" " " " " " " "	12,000.00			12,000.00			12,000.00
" " " " " " " "	9,900.00			9,900.00			9,900.00
" " " " " " " "	9,900.00			9,900.00			9,900.00
" " " " " " " "	5,000.00			5,000.00			5,000.00
" " " " " " " "	9,300.00			9,300.00	9,300.00		
Mystic and Malden rivers, Mass.							
Essex River, Mass.							
Renovating Green Jacket Shoal, Providence River, R. I.							
Improving—							
Providence River and Narragansett Bay, B. I.	38,700.00			38,700.00	36,500.00		2,200.00
Pawcatuck River, R. I.	2,500.00			2,500.00	2,500.00		
Pawtucket River, R. I.	34,300.00			34,300.00	27,300.00		7,000.00
Hartford and Holyoke.	8,940.30			8,940.30			8,940.30
" " " " " " " "	18,500.00			18,500.00	10,000.00		8,500.00
" " " " " " " "	10,935.00			10,935.00	9,500.00		1,435.00
" " " " " " " "	3,153.83			3,153.83	3,153.83		
" " " " " " " "	15,918.00			15,918.00	18,000.00		2,918.00
" " " " " " " "	3,895.19			3,895.19	3,895.19		
River and Hell Gate, N. Y.	10,000.00			10,000.00			10,000.00

Improving—
Narrows at Lake Champlain, N. Y. and Vt.

.....	15,700.00	15,700.00	.....	.....	85,000.00
.....	175,000.00	90,000.00	.....	.....	404,000.00
.....	650,000.00	180,500.00	.....	.....	2,150.00
.....	5,650.00	3,500.00	.....	.....	20,000.00
.....	20,000.00	.....	.....	.....	.....
.....	5,120.00	5,120.00	.....	.....	.....
.....	4,500.00	4,500.00	.....	.....	8,750.00
.....	37,250.00	28,500.00	.....	.....	2,000.00
.....	31,000.00	29,000.00	.....	.....	.....
.....	2,000.00	2,000.00	.....	.....	394.00
.....	1,394.00	1,394.00	.....	.....	2,242.77
.....	2,242.77	.....	.....	.....	2,000.00
.....	2,000.00	.....	.....	.....	64,800.00
.....	107,398.23	42,508.23	.....	.....	.....
.....	323,333.13	.....	.....	.....	323,333.13
.....	5,102.32	3.68	.....	.....	5,098.64
.....	20,800.00	10,000.00	.....	.....	10,800.00
.....	127,000.00	39,000.00	.....	.....	88,000.00
.....	20,250.00	19,000.00	.....	.....	7,250.00
.....	4,465.28	.....	.....	.....	4,465.28

ittsburg, Pa.
River, between Pitts-Monongahela River,
Va.

ila, Pa., and Camden

Improving—

Murderkill River, Del.	.....	.....	.....	.....	.....
Mispillion Creek, Del.	.....	.....	.....	.....	.....
Smymna River, Del.	.....	.....	.....	.....	.....
Chester River, Md.	.....	.....	.....	.....	.....
Patuxent River, Md.	.....	.....	.....	.....	.....
Susquehanna River, near Havre de Grace, Md.	.....	.....	.....	.....	.....
Wicomico River, Md.	.....	.....	.....	.....	.....
Potomac River	.....	.....	.....	.....	.....
Waterway from Chincoteague Bay to Indian River Bay, Va., Md., and Del.	.....	.....	.....	.....	.....
Aquia Creek, Va.	.....	.....	.....	.....	.....
Ocequan Creek, Va.	.....	.....	.....	.....	.....
Nomini Creek, Va.	.....	.....	.....	.....	.....
Urban Creek, Va.	.....	.....	.....	.....	.....
Appomattox River, Va.	.....	.....	.....	.....	.....
Chickahominy River, Va.	.....	.....	.....	.....	.....
James River, Va.	.....	.....	.....	.....	.....
Mattaponi River, Va.	.....	.....	.....	.....	.....
Pamunkey River, Va.	.....	.....	.....	.....	.....
Rappahannock River, Va.	.....	.....	.....	.....	.....
Staunton River, Va.	.....	.....	.....	.....	.....
York River, Va.	.....	.....	.....	.....	.....
North Landing River, Va. and N. C.	.....	.....	.....	.....	.....
New River, Va. and W. Va.	.....	.....	.....	.....	.....
Dan River, Va. and N. C.	.....	.....	.....	.....	.....
Lower Machodoc Creek, Va.	.....	.....	.....	.....	.....

\$400.00

Statement of appropriations under direction of the War Department for the fiscal year ending June 30, 1894, etc.—Continued.

Title of appropriation.	Balances July 1, 1893.	Appropriated July 1, 1893, to June 30, 1894.	Repayments July 1, 1893, to June 30, 1894.	Aggregate available.	Payments July 1, 1893, to June 30, 1894.	Carried to surplus fund June 30, 1894.	Balance June 30, 1894.
PUBLIC WORKS—continued.							
Harbors and Rivers—Continued.							
nd Ky.....	\$14,000.00			\$14,000.00	\$14,000.00		\$384,086.31
Va.....	705,281.69			705,281.69	339,195.38		18,500.00
a.....	22,500.00			22,500.00	4,000.00		10,020.49
arbor, Va., to Albemarle Sound, N. C.	16,020.95			16,020.95			
.....	9,000.00			9,000.00	9,000.00		98,500.00
iver and Swansboro, N. C.	100,000.00			100,000.00	4,500.00		4,200.00
.....	4,200.00			4,200.00			
.....	4,000.00			4,000.00			
.....	15,000.00			15,000.00			15,000.00
.....	175,000.00			175,000.00	77,000.00		98,000.00
Pasquotank River, N. C.	500.00			500.00			500.00
New River, N. C.	6,990.00			6,990.00			6,990.00
.....	19,003.00			19,003.00	4,500.00		14,503.00
N. C.	3,000.00			3,000.00			3,000.00
.....	1,600.00			1,600.00	1,600.00		
.....	2,000.00			2,000.00	2,000.00		
N. C.	43,006.76			43,006.76	11,500.00		31,506.76
.....	3,513.50			3,513.50	3,500.00		13.50
.....	4,500.00			4,500.00			4,500.00
.....	4,200.00			4,200.00	3,400.00		800.00
.....	6,000.00			6,000.00	4,500.00		1,500.00
.....	1,300.00			1,300.00	1,300.00		
.....	2.81			2.81	1.04		1.77
Black River, N. C.	2,500.00			2,500.00	2,500.00		
Mingo Creek, S. C.	6,100.00			6,100.00	4,100.00		2,000.00
Ashley River, S. C.	2,800.00			2,800.00	2,300.00		500.00
Congaree River, S. C.	3,762.24			3,762.24	2,000.00		1,762.24
Great Pee Dee River, S. C.	5,990.00			5,990.00	3,990.00		2,000.00
Little Pee Dee River, S. C.	2,700.00			2,700.00	2,200.00		500.00
Salkehatchie River, S. C.	2,000.00			2,000.00	2,000.00		
Santee River, S. C.	3,000.00			3,000.00	3,000.00		
Wateree River, S. C.	178,924.48			178,924.48	108,918.21		70,016.27
Altamaha River, Ga.	4,000.00			4,000.00	4,000.00		
Chattahoochee River, Ga.	4,000.00			4,000.00	4,000.00		
Coosa River, Ga. and Ala.	11,500.00			11,500.00	11,500.00		
Flint River, Ga.	499.39			499.39			499.39
Ocmulgee River, Ga.	22,750.00			22,750.00	22,750.00		
Oconee River, Ga.	4,839.20			4,839.20			4,839.20
Oostenaula and Coosawatie rivers, Ga.							
Savannah River, Ga.							
Lagrange Bayou, Fla.							

Choctawhatchee River, Fla. and Ala.	7,460.37			7,460.37	0,000.00		1,480.27
Caloosahatchee River, Fla.	1,000.00			1,000.00	1,000.00		202,000.00
S. John's River, Fla.	374,934.90			374,934.90	172,064.90		12,000.00
	12,000.00			12,000.00			
	35,094.43			35,094.43	85,000.00		65,000.00
	150,000.00			150,000.00	85,000.00		
	1,500.00			1,500.00	1,500.00		130,000.00
ra, Ala. and Miss.	193,000.00			193,000.00	63,000.00		28.08
	75,200.00			75,200.00	11,400.00		63,800.00
	2,946.18			2,946.18			2,946.18
	2,443.57			2,443.57	31		2,443.26
	5,000.00			5,000.00	2,000.00		3,000.00
	2,500.00			2,500.00	2,500.00		500.00
	3,000.00			3,000.00	2,500.00		12,500.00
	20,000.00			20,000.00	7,500.00		
	1,000.00			1,000.00	1,000.00		360,703.11
St. Louis to Des Moines Rapids, Wis.	2,878,916.41			2,878,916.41	2,618,123.30		3,000.00
mouths of Ohio and Illinois rivers, Ill. and Mo.	3,000.00			3,000.00			35,100.00
	35,100.00			35,100.00			
	44,621.49			44,621.49			
	1,500.00			1,500.00			
	6,000.00			6,000.00			
	25,000.00			25,000.00			
	96,497.23			96,497.23			
	125,000.00			125,000.00			
	10,000.00			10,000.00			
St. Louis to Des Moines Rapids, Wis.	2,050,000.00			2,050,000.00	1,760,333.33		290,666.67
	107.75			107.75	57.35		50.40
	5,000.00			5,000.00			
	10,000.00			10,000.00			
	5,000.00			5,000.00			
	319.31			319.31			319.31
	3,500.00			3,500.00			700.00
	71,300.00			71,300.00	11,500.00		59,800.00
	200,300.00			200,300.00	142,292.23		58,007.77
	22,100.05			22,100.05			22,100.05
	2,992.00			2,992.00			
	1,002.50			1,002.50			1,002.50
	156,377.00			156,377.00	110,450.00		45,927.00
	1,575.00			1,575.00			
	86,300.00			86,300.00	42,700.00		43,600.00
	80,000.00			80,000.00	40,000.00		40,000.00
	40,667.35			40,667.35			40,667.35
	222,000.00			222,000.00	206,200.00		12,800.00
	16,651.57			16,651.57			16,651.57
	36,308.78			36,308.78			35,368.78
Tennessee River, La.							
Red River, La. and Ark.							
Atchafalaya and Red rivers, La.							
Aranas Pass and Bay, Tex.							
Sabine Pass, Tex.							
Mouth of Brazos River, Tex.							
Passo Cavallo, Tex.							

Statement of appropriations under direction of the War Department for the fiscal year ending June 30, 1894, etc.—Continued.

Title of appropriation.	Balances July 1, 1893.	Appropriated July 1, 1893, to June 30, 1894.	Repayments July 1, 1893, to June 30, 1894.	Aggregate available.	Payments July 1, 1893, to June 30, 1894.	Carried to surplus fund June 30, 1894.	Balance June 30, 1894.
PUBLIC WORKS—continued.							
Harbors and Rivers—Continued.							
.....	\$17,000.00	.....	.....	\$17,000.00	\$17,000.00	.....	.....
.....	7,500.00	.....	.....	7,500.00	7,500.00	.....	.....
.....	10,000.00	.....	.....	10,000.00	10,000.00	.....	.....
.....	4,157.84	.....	.....	4,157.84	.....	.....	\$4,157.84
.....	4,800.00	.....	.....	4,800.00	4,800.00	.....	.....
Miss River, Ark. and Kans.	6,994.17	.....	.....	6,994.17	6,998.71	.....	3.56
.....	103,506.93	.....	.....	103,506.93	91,123.59	.....	12,383.34
.....	498.39	.....	.....	498.39	.25	.....	498.14
.....	892.75	.....	.....	892.75	.....	.....	892.75
Onashita River, Ark. and La.	30,000.00	.....	.....	30,000.00	19,100.00	.....	10,900.00
.....	48,464.57	.....	.....	48,464.57	36,531.02	.....	4,833.55
Ark.	2,500.00	.....	.....	2,500.00	2,496.90	.....	3.10
Ark.	3,091.33	.....	.....	3,091.33	2,927.99	.....	263.34
.....	3,000.00	.....	.....	3,000.00	1,000.00	.....	2,000.00
.....	4,500.00	.....	.....	4,500.00	1,500.00	.....	3,000.00
.....	498,000.00	.....	.....	498,000.00	235,000.00	.....	263,000.00
Cumberland River above Nashville, Tenn.	28,000.00	.....	.....	28,000.00	8,000.00	.....	20,000.00
Cumberland River below Nashville, Tenn.	10,000.00	.....	.....	10,000.00	10,000.00	.....	.....
French Broad River, Tenn.	3,000.00	.....	.....	3,000.00	1,500.00	.....	1,500.00
Forked Deer River, Tenn.	6,000.00	.....	.....	6,000.00	3,000.00	.....	3,000.00
Tennessee River above Chattanooga, Tenn.	490,853.91	.....	.....	490,853.91	101,300.20	.....	389,553.71
Tennessee River below Chattanooga, Tenn., Ala., and Ky.	1,500.00	.....	.....	1,500.00	1,500.00	.....	.....
Obion River, Tenn.	17.86	.....	.....	17.86	.....	.....	17.86
.....	32.98	.....	.....	32.98	.....	.....	32.98
1 River, Ky.	10,000.00	.....	.....	10,000.00	8,000.00	.....	2,000.00
Falls of the Ohio River at Louisville, Ky.	90,870.88	.....	.....	90,870.88	25,000.00	.....	65,870.88
.....	30,000.00	.....	.....	30,000.00	.....	.....	30,000.00
.....	485.00	.....	.....	485.00	.....	.....	485.00
.....	89,000.00	.....	.....	89,000.00	42,000.00	.....	47,000.00
below Pittsburg, Pa.	9,565.92	.....	.....	9,565.92	.....	.....	9,565.92
.....	235,859.43	.....	.....	235,859.43	157,000.00	.....	71,859.43
aburg, Pa.	294,883.16	.....	.....	294,883.16	131,963.14	.....	162,920.02
Ohio River	13,117.53	.....	.....	13,117.53	.....	.....	13,117.53
Muskingum River, Ohio	2,700.00	.....	.....	2,700.00	2,700.00	.....	.....
Sandusky River, Ohio	.....	.....	.....	.....	24,946.53	.....	.....
Operating snag boats on Ohio River	.....	.....	.....	.....	.....	.....	.....
Improving Detroit River, Mich.	20,000.00	.....	.....	20,000.00	.....	.....	20,000.00

	2,810.92		2,310.92		2,310.92		2,310.92
Examination of Portage Lake and Lake Superior Ship canal, Mich.	450,000.00		450,000.00		450,000.00		450,000.00
Improving—							
Hay Lake Channel, Sault Ste. Marie River, Mich.		\$134.37	134.37		134.37		134.37
St. Clair Flats Canal, Mich.							
	5,000.00		5,000.00		5,000.00		5,000.00
	8,564.00		8,564.00		8,564.00		8,564.00
	15,000.00		15,000.00		15,000.00		15,000.00
	70,000.00		70,000.00		70,000.00		70,000.00
	2,430,000.00		2,430,000.00		2,430,000.00		2,430,000.00
La Canal, Mich.	182.31		182.31		182.31		182.31
	5,000.00		5,000.00		5,000.00		5,000.00
	2,000.00		2,000.00		2,000.00		2,000.00
Bay to Lake Superior, Mich.	33,000.00		33,000.00		33,000.00		33,000.00
	2,000.00		2,000.00		2,000.00		2,000.00
	47,702.00		47,702.00		47,702.00		47,702.00
1 Dak.	4,456.00		4,456.00		4,456.00		4,456.00
	9,487.00		9,487.00		9,487.00		9,487.00
	6,488.00		6,488.00		6,488.00		6,488.00
	41,000.00		41,000.00		41,000.00		41,000.00
	808,850.50		808,850.50		808,850.50		808,850.50
	89,500.00		89,500.00		89,500.00		89,500.00
	50,000.00		50,000.00		50,000.00		50,000.00
	100,000.00		100,000.00		100,000.00		100,000.00
	1,000.00		1,000.00		1,000.00		1,000.00
	2,500.00		2,500.00		2,500.00		2,500.00
	93,500.00		93,500.00		93,500.00		93,500.00
	1,339.99		1,339.99		1,339.99		1,339.99
Missouri River	785,537.88		785,537.88		785,537.88		785,537.88
Yellowstone River, Mont. and Dak.	150,051.55		150,051.55		150,051.55		150,051.55
Examination of Missouri River from Three Forks to Canyon Ferry, Mont.	11,720.00		11,720.00		11,720.00		11,720.00
Improving—							
	2,254.01		2,254.01		2,254.01		2,254.01
	9,500.00		9,500.00		9,500.00		9,500.00
	4,000.00		4,000.00		4,000.00		4,000.00
Ariz.							
rivers, Cal.	140,000.00		140,000.00		140,000.00		140,000.00
	40,517.06		40,517.06		40,517.06		40,517.06
	2,500.00		2,500.00		2,500.00		2,500.00
Columbia River, Oreg.	3,169.49		3,169.49		3,169.49		3,169.49
Improving—							
Mouth of Columbia River, Oreg. and Wash.	172,000.00		172,000.00		172,000.00		172,000.00
Columbia River at Cascades, Oreg.	1,555,903.00		1,555,903.00		1,555,903.00		1,555,903.00
Columbia and Lower Willamette rivers, below Portland, Oreg.	20,000.00		20,000.00		20,000.00		20,000.00
	10,000.00		10,000.00		10,000.00		10,000.00
	4,000.00		4,000.00		4,000.00		4,000.00
	502.73		502.73		502.73		502.73
Willamette River, above Portland, Oreg.	15,000.00		15,000.00		15,000.00		15,000.00
Examinations of obstructions in Columbia River, Oreg.	531.70		531.70		531.70		531.70
Improving—							
Columbia River from Rock Island Rapids to Priest Rapids, Wash.	10,000.00		10,000.00		10,000.00		10,000.00
Cowlitz River, Wash.	1,000.00		1,000.00		1,000.00		1,000.00

Statement of appropriations under direction of the War Department for the fiscal year ending June 30, 1894, etc.—Continued.

Title of appropriation.	Balances July 1, 1893.	Appropriated July 1, 1893, to June 30, 1894.	Repayments July 1, 1893, to June 30, 1894.	Aggregate available.	Payments July 1, 1893, to June 30, 1894.	Carried to surplus fund June 30, 1894.	Balance June 30, 1894.
PUBLIC WORKS—continued.							
Harbors and Rivers—Continued.							
.....	\$8,000.00	.....	.....	\$8,000.00	\$8,000.00	.....	\$1,000.00
sh.....	24,000.00	.....	.....	24,000.00	24,000.00	.....	.....
.....	5,000.00	.....	.....	5,000.00	5,000.00	.....	.....
for Gulf of Mexico.....	768.96	.....	.....	768.96	.....	.....	768.96
is and other works of navigation.....	.....	\$502,891.54	.....	502,891.54	680,302.16	.....	.....
x craft obstructing or endangering naviga- tion.....	.....	48,607.61	.....	48,607.61	47,340.93	.....	.....
examinations, surveys, and contingencies of rivers and harbors.....	158,227.08	.....	.....	158,227.08	56,917.36	.....	101,309.72
Total harbors and rivers.....	31,717,900.03	927,032.91	\$509.06	32,645,833.40	19,494,647.16	.....	13,359,186.28
Repayments in excess of payments.....	.....	.....	.....	.....	609.65	.....	.....
Actual expenditures.....	.....	.....	.....	.....	19,494,637.49	.....	.....
MISCELLANEOUS OBJECTS.							
Signal Service.							
Road to the signal station on Pike's Peak, Colo.....	10,000.00	.....	.....	10,000.00	.....	.....	10,000.00
Military telegraph lines.....	238.29	.....	.....	238.29	16.23	.....	.....
Military telegraph line from Fort Ringgold, Tex., to Fort McIntosh, Tex.....	.....	17,000.00	.....	17,000.00	16,000.00	.....	2,000.00
Total Signal Service.....	10,238.29	17,000.00	.....	27,238.29	15,016.23	319.96	12,000.00

fiscal year 1894.

National cemeteries.

.....	2,452.52	100,000.00	.....	102,452.52	92,872.26	134.14	2,445.04
.....	1,705.83	61,880.00	.....	62,585.83	60,840.67	940.50	1,780.00
.....	22,080.77	6,000.00	.....	28,080.77	11,696.56	.....	16,453.21
.....	3,680.00	10,000.00	.....	13,680.00	1,910.00	.....	11,770.00
.....	2,000.00	.....	.....	2,000.00	.....	.....	2,000.00
.....	27,311.08	25,000.00	.....	52,311.08	22,510.00	.....	29,791.99
.....	.....	1,500.00	.....	1,500.00	1,000.00	.....	500.00
Total national cemeteries	59,230.20	208,380.00	.....	365,610.20	107,785.08	1,038.54	66,749.90

Artificial limbs and appliances.

Artificial limbs	56,221.78	645,000.00	.....	701,221.78	590,894.75	27,438.26	53,898.17
Trusses for disabled soldiers .....	.....	6,275.76	.....	6,275.76	6,275.76	.....	.....
Appliances for disabled soldiers	28.40	2,000.00	.....	2,028.40	1,545.87	28.40	434.13
Total artificial limbs and appliances	56,250.18	652,275.76	.....	708,525.94	597,736.38	27,517.26	53,272.30

Civil surveys.

Battle lines and sites for tablets at Antietam	19,810.00	18,000.00	.....	34,810.00	8,000.00	.....	26,810.00
Survey of Northern and Northwestern lakes	842.90	27,000.00	.....	27,842.90	26,888.17	876.52	78.21
Survey of road from Aqueduct bridge to Mount Vernon	2,112.71	.....	.....	2,112.71	.....	.....	2,112.71
Total civil surveys	22,265.61	42,000.00	.....	64,265.61	34,888.17	876.52	28,500.92

Miscellaneous.

.....	228,491.77	400,000.00	.....	628,491.77	418,418.01	.....	207,073.76
.....	.....	5,000.00	.....	5,000.00	5,000.00	.....	.....
.....	.....	1,500.00	.....	1,500.00	1,500.00	.....	.....
.....	14,462.17	70,240.00	.....	80,702.17	74,253.97	9,497.10	6,951.10
.....	57,099.01	175,000.00	.....	232,098.61	252,495.78	24.38	8,569.50
.....	5,289.44	3,000.00	.....	9,289.44	1,592.83	2,757.56	4,939.05
.....	165,315.00	575,000.00	.....	740,315.00	662,861.75	.....	12,838.25
.....	2,498,153.92	2,378,543.89	.....	2,543,878.89	2,230,258.65	189,344.65	188,375.53
.....	11,792.29	191,280.04	.....	2,089,433.96	127,710.00	.....	2,561,723.87
.....	18,706.01	.....	.....	11,792.29	.....	.....	11,792.29
.....	5,668.54	.....	.....	18,766.01	5,000.00	.....	13,766.01
.....	.....	.....	.....	5,668.54	.....	.....	5,668.54
.....	.....	.....	.....	18.07	.....	.....	18.07
Total miscellaneous	3,031,036.85	3,805,583.93	.....	6,836,638.85	3,082,591.08	151,538.65	3,002,514.13
Repayments in excess of payments .....	.....	.....	.....	.....	18.07	.....	.....
Actual expenditures .....	.....	.....	.....	.....	18.07	.....	.....

REPORT OF THE SECRETARY OF WAR.

Statement of appropriations under direction of the War Department for the fiscal year ending June 30, 1894, etc.—Continued.

Title of appropriation.	Balances July 1, 1893.	Appropriated July 1, 1893, to June 30, 1894.	Repayments July 1, 1893, to June 30, 1894.	Aggregate available.	Payments July 1, 1893, to June 30, 1894.	Carried to surplus fund June 30, 1894.	Balance June 30, 1894.
MISCELLANEOUS OBJECTS—continued.							
<i>War claims of States.</i>							
Examination of claims of States and Territories under act June 27, 1882.	\$5,689.75			\$5,689.75			\$5,689.75
Reimbursing State and citizens of California for expenses in suppressing Modoc Indian hostilities.	224.25			224.25			224.25
Total war claims of States	5,914.00			5,914.00			5,914.00
<i>War claims of volunteers.</i>							
Bounty to volunteers, their widows and legal heirs	98,822.19	\$250,710.01		349,532.20	\$199,031.72	\$3,302.74	147,197.74
Bounty to Fifteenth and Sixteenth Missouri Cavalry Volunteers		1,366.27		1,366.27	1,366.27		
Bounty under act of July 28, 1866.	2,597.45	35,000.00		37,597.45	15,636.64	2,276.09	19,684.72
Pay of two and three year volunteers.	181,089.56	435,257.88		616,347.44	180,082.06	8,353.30	427,912.08
Services and supplies of Montana volunteers in the Nez Percé Indian war.	657.00			657.00			657.00
Three months' pay proper.		975.00		975.00	975.00		
Horses and other property lost in the military service.	1,265.96			1,265.96			1,265.96
Commutation of rations to prisoners of war in rebel States and to soldiers on furlough.	18,525.83	30,029.00		48,554.83	9,666.63		38,888.20
Extra pay to officers and men who served in the Mexican war.		636.00		636.00	636.00		
Capture of Jefferson Davis.	1,503.38			1,503.38			1,503.38
Total war claims of volunteers	304,461.37	753,974.16		1,058,435.53	407,394.32	13,932.13	637,109.08
<i>Erection of monuments.</i>							
Monuments or tablets at Gettysburg.	13,236.60	25,000.00		38,286.60	29,014.04		9,272.56
Statue to memory of La Fayette and compatriots.	103.53			103.53			103.53
Monument at Washington's headquarters, Newburg, N. Y.	64.76			64.76			64.76
Pedestal for statue of—							
Gen. Philip H. Sheridan	50,000.00			50,000.00			50,000.00
Gen. John A. Logan	50,000.00			50,000.00	2,000.79		47,999.21
Gen. Winfield Scott Hancock	49,000.00			49,000.00	2,000.00		47,000.00
Gen. William T. Sherman	50,000.00			50,000.00			50,000.00
Total erection of monuments	212,454.89	25,000.00		237,454.89	33,014.83		204,440.06

Relief acts.

Claims of officers and men of the Army for destruction of private property.....	.....	1,515.04	.....	1,515.04	1,515.04	.....
g the rebellion.....	6,939.90	.....	.....	6,939.90	.....	6,939.90
applies, act July.....	1,446.41	.....	.....	1,446.41	75.00	1,521.41
supplies taken by.....	130.00	.....	.....	130.00	.....	130.00
act March 3, 1891.....	.....	23,763.63	.....	23,763.63	.....	.....
.....	44,800.00	.....	.....	44,800.00	.....	44,800.00
.....	.....	6,523.50	.....	6,523.50	.....	.....
.....	.....	1,396.31	.....	1,396.31	.....	.....
Total relief acts.....	53,315.41	23,198.53	.....	80,513.94	83,573.53	83,240.41

RECAPITULATION.

Salaries, contingent expenses, and postage.....	\$58,248.59	\$2,123,154.00	.....	\$2,181,397.59	\$2,000,674.99	\$161,908.43
Military establishment, Army and Military Academy.....	2,753,462.95	24,667,705.42	.....	28,421,169.26	28,665,156.18	8,587,625.35
Public works.....	39,127,559.94	4,134,053.50	\$620.59	43,262,234.13	25,372,176.55	17,972,723.41
Miscellaneous objects.....	3,755,173.80	5,535,412.38	18.07	9,290,604.25	5,001,700.30	4,083,740.79
Total.....	46,694,440.19	36,460,325.40	638.65	63,155,404.25	56,039,648.00	25,615,997.98
Repayments in excess of payments.....	.....	.....	.....	.....	638.65	.....
Actual expenditures.....	.....	.....	.....	.....	56,039,009.34	.....

R E P O R T

OF THE

MAJOR-GENERAL COMMANDING THE ARMY.

REPORT

OF THE

MAJOR-GENERAL COMMANDING THE ARMY.

HEADQUARTERS OF THE ARMY,
Washington, October 1, 1894.

SIR: I have the honor to submit the following report of the operations of the Army during the past year, including the reports of the several department commanders and of their chief staff officers; of the commanding officers of the Artillery School at Fort Monroe; of the Infantry and Cavalry School at Fort Leavenworth, and those of the Adjutant-General and Inspector-General of the Army. The annual report of the commanding officer of the Cavalry and Light Artillery School at Fort Riley, Kans., will be submitted after the close of the season of practical instruction at that place.

During a large part of the year the Army has been employed in the suppression of domestic violence, which took the form, in many cases, of forcible resistance to the execution of the laws of the United States, seizure or destruction of property under the care of United States officers, and open defiance of the national authority. The details of all the operations of the troops, already generally familiar to the public, are described in the accompanying reports of the department commanders, and hence need not be repeated here.

These disorders, at first local in their character, spread at length to about one-half in number and two-thirds in area, of all the States and Territories, excluding Alaska. So widespread and formidable an insurrection called for the vigorous action dictated by the President. It became necessary to confer upon the commanding generals of six departments, viz, the Missouri, Dakota, Platte, Colorado, California, and the Columbia, full authority in executing the orders of the President, to employ the entire military force under their command, according to their own best judgment and the instructions they had received from Headquarters of the Army, to protect public property and enforce obedience to the laws of the United States.

At the city of Chicago resistance to lawful authority assumed such formidable proportions that it was necessary to concentrate at that place nearly all the forces that could be made available from all parts of the country, while, on the Pacific Coast, the Navy Department placed at the disposal of the Department Commander the naval and marine forces at the Mare Island Navy-Yard, and those forces rendered valuable services. These responsible duties, thus devolved upon the department commanders, were performed by them and the troops

under their command in the most satisfactory manner. The insurrection was promptly suppressed and the authority of the Government everywhere enforced, and this without any unnecessary sacrifice of life in any case.

Such a result would have been impossible, except for the judicious distribution of troops already existing, under the command of general officers of education, experience, tried fidelity to the national interests, and profound respect for civil authority and the laws of the land. The people of the United States may well be proud of their little Army, so thoroughly devoted to the public interests.

The numerous demands for the services of United States troops in connection with domestic disorders disclosed some lack of accurate knowledge respecting the circumstances and conditions under which the military forces of the United States may be lawfully employed and the manner in which the troops may lawfully act in the suppression of such disorders.

The circumstances under which the national forces may be employed were materially modified by the act of Congress, approved June 18, 1878, commonly called "the posse comitatus act," and no exact definition of the duties of the troops as modified by this act had ever been published. So, also, for the first time at least in many years, it has become necessary to employ the national forces against a lawless mob forcibly resisting the execution of the laws of the United States, former cases of like employment of United States troops having been under the general provisions of the Constitution and laws for the suppression of insurrection in a State, under a call made by the State authorities upon the President, as provided in the Constitution.

But by the use of the telegraph the necessary instructions were speedily communicated to all concerned, so that no material departure was actually made in any case from the strict requirements of the law, and as speedily as practicable carefully prepared instructions were issued for the government of the Army, both in respect to the circumstances under which and the purposes for which the troops may be employed, and the manner in which they should act in the execution of lawful orders for the suppression of forcible resistance to the execution of the laws of the United States, or in the protection of property belonging to or under the care of the United States. The prompt and vigorous action of the troops in all cases and the great forbearance manifested by them when subjected to all sorts of insults and indignities, designed to provoke retaliation, were worthy of the very highest commendation. They illustrate in the most striking manner the great value to a government of a well-disciplined force at all times subject to the orders of that government for the enforcement of the faithful execution of its laws.

It would seem unnecessary to point out the fact that any force like the militia of a State, or the police of a city, acting primarily under another authority, though highly efficient in their appropriate service, can not be made a reliable instrument for the prompt and effective execution of the laws of the United States. Manifestly, every government should have an adequate force of its own for the execution of its own laws, no less than the judicial and executive officers necessary for the same purpose.

The country is now for the first time squarely confronted with the necessity of making adequate provision, not only for defense against any possible foreign aggression, but also for defense against domestic violence in the form of forcible resistance to the laws of the United

States. It therefore becomes more than ever necessary to calmly and dispassionately consider the adequacy of means to that end. A just estimate of these means requires consideration of the vast extent of the United States territory and the great amount of property, widely dispersed throughout this territory, either belonging to the United States or in such condition as to be under the protection of the National Government. When these facts are duly considered it becomes manifest that the present strength of the Army is not adequate to the performance of the service which may at any time be required. It is true that in the recent emergency, by the most prompt and vigorous action and the concentration of troops from various parts of the country, the duty required was promptly and effectively performed. But the military resources were taxed nearly to the extreme limit for this purpose, and in the event of such extension of disorders, as was for some time threatened and made to appear more than probable, it was found by careful estimate that the resources of the Government would prove inadequate to give the necessary protection in all parts of the country; so that vast injury would have resulted to the public interests throughout a large part of the United States before the resources of the Government could have been so augmented as to have suppressed the insurrection.

It is certainly manifest that the present condition of the country, with a population of nearly seventy millions, under the danger of disorder now known to exist, can not be met by the same force that was deemed adequate twenty-five years ago, when the population of the country was less than half its present amount, and domestic violence was not apprehended. One man to 14 square miles of territory, or one man to twenty-eight hundred of population, is surely a very small guard to protect property and prevent violation of law, leaving out of consideration the force necessary to guard the extended seacoast against sudden attack by a foreign enemy. It is also worthy of remark that more than once in the last summer an infuriated mob in a single city was twice as formidable in numbers and capable of doing vastly greater injury to life and property than the most formidable combination of Indian warriors that ever confronted the Army in this country. In other words, the Army has recently been required to deal with an enemy far more numerous and dangerous to the country than any savage enemy which it has heretofore been called upon to meet.

It seems clear that the effective strength of the Army should now be considerably increased. Yet, this can be done at a very small comparative increase in cost. The present regimental organizations need not be largely increased. Two additional regiments of artillery for the necessary sea coast defense; two additional regiments of cavalry to patrol the long lines of railroad under Government protection, and the present twenty-five regiments of infantry, converted into three battalion organizations, would, it is believed, be a just, conservative estimate of what is now actually needed. For this the existing number of commissioned officers is nearly sufficient. But a considerable permanent increase in the enlisted strength of the Army should be made, and a still further increase authorized to be made by the President when, in his judgment, an emergency requiring it may reasonably be foreseen. Such disorders as those which have afflicted the country during the last year do not come suddenly or unexpectedly. Intelligent observation fully justified the prediction of such troubles a year before they appeared. Coincident with the first indication of coming disorder was a diminution of industrial employment, by which large

numbers of honest and faithful laborers were deprived of their accustomed work, and hence sought enlistment in the Army. These men could not be received because of the limit fixed by law upon the enlisted strength of the Army. These applicants for enlistment during the first eight or twelve months were not the kind of men who participate in the operations of a lawless mob. They were simply honest laborers who could no longer obtain employment in civil life and hence sought it in the Army. If authority had existed by which the President could have received a few thousand of these men into the ranks, they would have become well disciplined, reliable soldiers by the time the troops were called out to suppress mob violence. After the restoration of peace and prosperity has given assurance that the Army will not probably be employed in the suppression of domestic violence for several years, the ranks may well, in the discretion of the President, be reduced, to save expense.

It is not a good military system in which the Executive has no authority whatever to increase the effective strength of the Army in time of need, but must await the slow process of legislation for that purpose. The organization being fixed by law, with maximum and minimum limits of strength, the Executive should be authorized to vary the enlisted strength between those limits according to his estimate of the necessities of the country. The cost of the suggested increase in the strength of the Army would be utterly insignificant as compared with the damage which might have been done in a single day in one city, if the military force assembled at that point had proved inadequate.

Wise forethought, in apparent anticipation of such conditions as those which have confronted the Government during the last year, dictated several years ago the establishment, under authority of Congress, of large military posts near the great business and railway centers of the country. Several of these large posts are now in condition to be occupied by troops, while others are in process of construction, and a few others are still demanded, for which it is presumed Congress will in due time make the necessary appropriations.

As a consequence of the execution of this policy, small frontier posts, formerly necessary in connection with the spread of civilization over the vast western territory and the suppression of Indian hostilities therein, now no longer necessary for such purposes, have been abandoned. A few others may doubtless be abandoned in the near future, but the larger posts in the vicinity of the great Indian reservations must doubtless be maintained for many years.

The present strength of the Army is not quite adequate to supply appropriate garrisons for all the posts now occupied or ready for occupation, while the new posts which must undoubtedly be authorized by Congress in the near future, especially along the seaboard where permanent fortifications are contemplated, will be entirely without appropriate garrisons, unless the Army is suitably increased. But if the very moderate increase in the effective strength of the Army which has been recommended be authorized and the military posts heretofore recommended be constructed, the Army will be, so far as can now be anticipated, in a fairly effective condition to enforce the faithful execution of the laws of the United States. This view of the military necessities of the country must, it would seem, be manifest to every intelligent citizen.

But, in respect to the military necessities which may possibly arise out of conflict with foreign powers, it has for many years seemed impos-

sible to impress upon the people of the United States in general the views entertained by all thoughtful military students. This impossibility appears to have resulted very largely from the national self-esteem which grew out of the results of the great domestic conflict through which the country passed in the period from 1861 to 1865. The condition of the public mind since that time has been that of confident invincibility against any possible foreign attack. However humiliating it may be to this confident self-esteem, it is nevertheless a simple duty to point to the great military lesson which is now being taught to the entire world.

The most populous and one of the most wealthy of all the nations of the earth is subjected to extreme humiliation and disgrace, to result possibly in the overthrow of a dynasty, at the hands of a little nation of one-tenth its population and about one-tenth its territorial area. And why is this? It is not because that great people are lacking in talent, or general education, or military courage, but because they have failed to develop their military strength and resources. In disciplined troops, in arms and equipments of all kinds, in efficient ships of war and in general military preparation and education they are far behind the enterprising little military nation that is now teaching them and the world this tremendous lesson.

The relation of the United States to the great military powers of Europe now exhibits a far greater disparity in respect to preparation for war than that which has existed between China and Japan. Will the people of the United States and their representatives have the modesty to appreciate and the wisdom to profit by this lesson?

The Atlantic Ocean is, under modern conditions, little more serious an obstacle to the navies and transports of Europe than are the Japan and Yellow seas to those of Japan. Whence comes our feeling of security? Are the other nations of the earth so much more in love with us and our institutions than are our own people that we can always rely upon the friendship and good will of foreigners, while many thousands of our own citizens must be controlled by the strong military arm? Are our statesmen so far more skilled in statecraft and diplomacy than others that we can rely upon their ability to always secure by such means the interests and honor of the United States in competition with the often conflicting interests of other countries? Or are the people of this country ready to see the national honor sacrificed when need be to secure material interests or avoid conflict of arms? What guarantee of peace with honor has the history of the world ever assured except preparation for war, and now that modern science has so radically changed the conditions of military and naval success, how much more impossible has security for peace consistent with honor become, except through thorough preparations for war! This modern feeling of security among apparently a large majority of the people of the United States, which appears to have arisen out of the domestic conflict in which the country was engaged from 1861 to 1865, and the immense military strength developed in that conflict, was to a large extent justified for a certain period of time. Both the military strength developed during and continuing to exist for some years after the civil war, and the moral influence produced thereby upon the military nations of the world, justified for a time a feeling of confidence which seemed to render unnecessary preparations for war. As a consequence of this the ancient policy of the United States, which had been followed from the foundation of the Government to the year 1861, of thorough preparation in the way of seacoast fortifications and an

effective Navy was almost entirely abandoned for many years. It has since seemed difficult, if not impossible, to revive that wise national policy.

A brief reference to the character of the great civil conflict in this country seems important in this connection. The circumstances and results of that conflict did not in fact justify any long continuance of the supreme self-esteem and feeling of invincibility indulged in by the people of this country. The great civil war was a contest of superior numbers and resources against an adversary inferior in both, and little better prepared at the commencement of the contest. The result was reached after a long, desperate, and exhausting struggle, characterized for the most part during the first half of its term by military failures, or imperfect successes, due entirely to lack of previous preparation. The result of that contest in a military sense was undoubtedly the ultimate development of practical military strength in the united country, superior to that of any other nation at that time, and perhaps superior to any national military strength that had before existed. But the armies of 1865 exist no longer. The veteran soldiers North and South, East and West, are no longer physically able to bear arms. Upon the sudden outbreak of a great war the country, though now happily united, would be in little better condition than either the North or the South found itself in 1861. The combined strength of the entire country, though now double in numbers of men and in military resources, would be no match whatever for the trained army of either North or South as it existed in 1864. In other words, the military strength of either section, when developed by experience and training, became immeasurably greater than that of the entire country without such training, either then or now. This is the true measure of the present military strength of this country; and this while other nations have greatly increased their effective strength in the last thirty years.

The time has, therefore, fully come when the people of the United States should dismiss the over-confidence born of past experience and look the future squarely in the face. The more especially is this the fact in respect to the extended seacoasts of the country and the broad oceans where the interests of the United States must be defended and protected, if this country is to continue to be a first-class nation. Armies, even though well disciplined, well instructed and perfectly armed, can not defend the seacoast against modern ships of war. Suitable fortifications with effective high-power armament are the only possible means of such defense, while the finest navy which the able officers of that department have ever proposed will be abundantly employed in rendering indispensable service in all parts of the maritime world. Hence, no time should be lost in prosecuting a system of fortifications and armament heretofore inaugurated, until all the great seaports of the country are placed in a satisfactory condition for effective defense against any possible attack. The most liberal appropriations for this purpose will be the wisest economy.

Every year heretofore, in proportion to my official responsibilities, I have endeavored to point out what I believed to be the military necessities of the country in these respects. Now in this, the last annual report which I expect to be called upon to write, I deem it my duty to make a last and more emphatic presentation to my fellow-citizens and to their Government of what I consider requisite to place their military establishment in all respects on a footing commensurate with the interests, dignity, and honor of a great nation.

Continental isolation is no longer any security against formidable attack. Great population and wealth are only the crude materials

from which military strength may be created. No nation, however populous and wealthy, can hope to maintain itself among the great nations of the earth, unless its military strength is made by development to bear a reasonable proportion to that maintained by the other great nations.

The conflicting interests and jealousies of other nations may at times prevent any of them from engaging in active hostilities against this country, but at other times similar interests and jealousies are as likely to unite them against us. Are the United States willing to occupy this humble place of dependence upon the interests and jealousies of other nations? Or will they assume and maintain their great place among the nations of the earth—mistress of their own policy and arbiter of their own destiny?

DISCIPLINE AND INSTRUCTION.

The discipline of the Army has been thoroughly tested and found to be entirely satisfactory in the extraordinary service which it has been called upon to perform. Military instruction has been somewhat interrupted by this extraordinary service, but the autumn months and the winter months in southern latitudes will be occupied in such instruction. So that the year will not pass without the full enjoyment of practical exercises prescribed by regulations and general orders.

SMALL ARMS AND FIELD ARTILLERY.

Satisfactory progress is being made in the supply of the newly adopted magazine rifle for the infantry and of the new breech-loading rifle field guns for the field artillery. I beg leave to again suggest that the supply of these modern arms be increased so that not only may all the regular troops and organized militia be fully armed with them, but that there may be an adequate reserve for any additional force that may be suddenly called into service.

FORTIFICATION AND ARMAMENT.

Steady progress is being made in the manufacture of high power guns and mortars and in the construction of emplacements for them for the most important seacoast defenses in the country. The invention and construction of suitable carriages for such guns have been a serious obstacle in all parts of the world, but the problem involved in this matter is approaching satisfactory solution in this country, which is, it is believed, in advance in that regard of any other country in the world. It is hoped that the necessary appropriations for this work will be made, so that it may be steadily and rapidly prosecuted until all the great seaports of the country are placed in a secure condition against any possible foreign attack.

BARRACKS AND QUARTERS.

Considerable progress has heretofore been made in the construction of quarters and barracks for the troops at the most important stations in the country, but it still remains to construct such accommodations for those sea port stations, especially along the South Atlantic and Gulf ports and on Puget Sound, where there are now very small garrisons or none at all, and where modern fortifications and armament must necessarily be placed to protect important cities and their commerce from destruction by any foreign foe.

ARMY REORGANIZATION.

The reorganization of the infantry of the Army into three battalion regiments, as long urged by military men, still remains under the consideration of Congress. So also the necessary increase of the artillery to provide for the seacoast defense. Some increase of the cavalry of the Army is believed also to be necessary, or at least highly desirable. The militia of the country can not be relied upon to furnish cavalry in an emergency no more than field artillery. Hence, the proportion of these arms in the Regular Army should be greater than that required for war service. Recent experience has demonstrated the absolute necessity of a considerable cavalry force for service in the vast territories traversed by railroads, designed largely for Government service, transportation of mails, troops, and military and naval supplies, and hence entitled to the protection of the United States, without which protection their service may at any time be completely paralyzed. I beg leave to suggest that this is a favorable time for the dispassionate consideration of this subject, with a view to such increase in the military establishment and such improvement of organization as will make the Army thoroughly effective for the purposes for which it is maintained.

MILITARY EDUCATION.

The constantly increasing interest in military education is manifested by an increased demand upon the Army for officers for duty at colleges, universities, and other institutions of learning throughout the country. Another gratifying feature is the awakened interest in the policy recommended many years ago, by which such military education shall be extended to the public schools, so that a very large number of young men, who may not aspire perhaps at the start to commissions in a volunteer army, will be well qualified for the positions of noncommissioned officers, and hence, for the molding of a volunteer force into a reliable army in the shortest possible time. It is believed that no better employment can be given to the officers of the Regular Army in time of peace than in this wide dissemination of elementary military education, and if any justification be thought necessary for some increase in the aggregate number of commissioned officers, it is fully supplied by this demand for such important services.

In the regular establishment military education still continues to be highly satisfactory. The established institutions at West Point, Willets Point, Fort Monroe, Fort Leavenworth, and Fort Riley, are giving to the Army a corps of officers superior in education on the average to that of any other army in the world, while the Military Service Institution and the general lyceum system recently established throughout the Army are aiding largely in this important work of the higher education of the officers of the Army, and also of those of the national guards of the several States, and of citizens generally who are interested in military science.

INDIAN SOLDIERS.

The enlistment of Indians in the Army has satisfactorily accomplished the main purpose had in view in its adoption, namely, to demonstrate the present and prospective value for military purposes of the several Indian tribes, as well as in the minor objects had to some extent in view. The result has been that some of the organizations have been disbanded and the men discharged upon the expiration of their term of service, while some others will probably follow the same

course. In other cases the Indian has proved to be a thoroughly reliable, well-disciplined, and efficient soldier, and it is not difficult to estimate the proportion of the tribes to which such soldiers belong who would be reliable in the Government service in time of war, or dangerous to the Government if seriously disaffected. It will not be necessary to pursue this experimental trial much further, but will simply be a question of policy to determine how many of the reliable Indian soldiers shall be retained in service, and for what length of time.

TERM OF ENLISTMENT OF TROOPS.

The recent modification of the law in respect to the term of enlistment and in respect to the continuance in service of soldiers who have proved themselves valuable to the Army, will undoubtedly lead to beneficial results. In such trials of fidelity, subordination, and obedience under the most trying circumstances as those to which recent events show the Army of the United States at any time liable to be subjected, a considerable percentage of old soldiers who know nothing superior to military fidelity and duty can not be overestimated. All men possessed of such qualities should be retained in service as long as they are physically qualified, and provided as now with honorable retirement when no longer able to serve in the ranks.

THE RECRUITING SERVICE.

Changes recently introduced by the War Department in the conduct of the recruiting service will, it is believed, be beneficial to that service, and also productive of economy. It will in addition give to the Department three considerable garrisons of old soldiers in the heart of the country, ready for any service that may be required of them, in place of considerable bodies of recruits not yet qualified for delicate service. During several years the character of the recruits received into the Army has been gradually elevated, and this process has now been made far more easy and certain through recent legislation. None but thoroughly reliable men in all respects need be received into so small an Army as that of the United States in time of peace.

The several staff departments of the Army, no less than the line, deserve high commendation for the faithful and efficient manner in which they have discharged all their duties appertaining to the health and comfort, to the subsistence, equipment, and transportation of the troops. I take pleasure in acknowledging my indebtedness to the chiefs of all those departments for the cordial manner in which they have assisted me in the discharge of every duty.

The officers of my immediate staff have performed their several duties with ability, zeal, and perfect fidelity.

To the President and to the Secretary of War, I beg leave to tender my thanks for the kind and generous confidence which they have uniformly manifested, by which in great measure has been established a more satisfactory relation between the military administration and the command of the Army than has perhaps existed at any former period in the history of the country.

I have the honor to be, sir, your obedient servant,

J. M. SCHOFIELD,
Major-General Commanding.

Hon. DANIEL S. LAMONT,
Secretary of War.

REPORTS
TO THE
MAJOR-GENERAL COMMANDING THE ARMY.

REPORT OF THE ADJUTANT-GENERAL.

HEADQUARTERS OF THE ARMY,
ADJUTANT-GENERAL'S OFFICE,
Washington, September 28, 1894.

SIR: Pursuant to your instructions, I have the honor to submit the annual returns of the Army:

- A.—Showing the actual strength of the Army June 30, 1894.
- B.—Showing position and distribution of the troops, by departments, taken from the latest returns on file in the Adjutant-General's Office.
- C.—Geographical departments and posts, with distribution of troops, post-offices, telegraph stations, and nearest railroad stations and boat landings.
- D.—Statement showing gain and loss in the enlisted strength of the Army during the fiscal year ended June 30, 1894.

The number of enlisted men in service June 30, 1894, receiving increased pay under the act of Congress of August 4, 1854, was as follows:

Five years' continuous service (\$2 per month).....	3, 664
Ten years' continuous service (\$3 per month)	1, 993
Fifteen years' continuous service (\$4 per month).....	1, 065
Twenty years' continuous service (\$5 per month)	673
Twenty-five years' continuous service (\$6 per month).....	236
Thirty years' continuous service (\$7 per month).....	4
Thirty-five years' continuous service (\$8 per month).....	2
Forty years' continuous service (\$9 per month)	1
Total.....	7, 638

The number of those who will become entitled to increased pay under the act of Congress of May 15, 1872, during the fiscal year ending June 30, 1896, is:

Reenlisted pay.....	525
One dollar per month for third year of service.....	5, 220
Two dollars per month for fourth year of service.....	5, 281
Three dollars per month for fifth year of service.....	4, 282
Total.....	15, 308

And the number of enlisted men whose terms will expire during the fiscal year ending June 30, 1896, is 3,230. Regimental commanders report that 80 per cent of the number of men who will be discharged in the coming six months have declared their intention to reenlist.

THE LINE OF THE ARMY.

With a legal force of 25,000 men, the actual average fighting strength of the Army during the past five years has been 20,488. Deducting the sick, the total effective force available for service at any time during that period has been about 5,000 less than the nominal enlisted strength of the Army. These 5,000 are made up of the engineer and ordnance detachments, post quartermaster-sergeants, post commissary-sergeants, ordnance-sergeants, hospital stewards, the detachments at West Point, the Military Prison guard, etc., most necessary to avoid drawing men from the line of battle to perform their duties, but not strictly a combative force. Paucity in the number of our soldiers has necessitated great outlays in transportation to concentrate from remote places sufficient troops to act in an emergency at a single point. Moved hither and yon, this small body has been distinguished for the amount and character of its good work. In recent events in the performance of its duty to restore order and preserve the peace, subjected by lawless people to insulting words and deeds well calculated to invite bloodshed, it has displayed a behavior possible only to highly disciplined men under cool and judicious commanders.

It is earnestly recommended that the enlisted strength of the Army be increased to 30,000 men, so as to give a maximum of 25,000 as the regimental fighting force. This maximum is only about two-thirds of the minimum organization prescribed by the Revised Statutes for cavalry, artillery, and infantry regiments, yet it will enable the Government to reorganize its artillery into seven regiments for coast defense and field artillery, and its infantry into three battalion regiments, without interfering with the strength of the cavalry.

THE INDIAN SOLDIER.

No means was neglected to insure the success, if it were possible, of the plan set forth in General Orders, No. 28, Headquarters of the Army, March 9, 1891, for the recruitment of eight troops of cavalry and nineteen companies of Indian infantry. Recruiting officers were selected from among those officers of the Army having large and varied knowledge of the Indian character and habits. The tribal rights of the enlisted Indians were zealously guarded, and, by permission of the Interior Department, cooks, tailors, carpenters, blacksmiths, etc., were sought among the members of the Indian schools at Carlisle, Hampton, and elsewhere. The result obtained after prolonged trial has not been encouraging.

The number of Indians in the line of the Army was 417, June 30, 1891; 780, June 30, 1892; 771, June 30, 1893; and June 30, 1894, was but 547, only six troops of cavalry and four companies of infantry remaining in existence at that date.

Lack of knowledge of the English language, restlessness and discontent under absolutely new conditions of life and habits, marriage, demoralization when stationed near Indian reservations, are among the causes which have interfered to prevent the Indian from becoming a valuable American soldier.

As the object for which these enlistments were authorized has been fully accomplished, I am of opinion that further attempts to incorporate Indians as a part of the Army will neither benefit them nor the service.

DESERTIONS.

The total number of desertions during the past fiscal year is 1,073, a decrease of 609 in the number reported from the preceding year. While the desertions from the several recruiting depots and rendezvous reached 14 per cent of the average strength of those stations, the average rate throughout the Army is less than 4.5 per cent. It is hoped that recent legislative action governing enlistments will further lower the record of desertions.

The majority of desertions appear to have occurred among men of less than one year's service. During the fiscal year ended June 30, 1892, the ratio of men deserting during the first year of their service was 73.10 per cent of the whole number of desertions; in the following year it was 71.14; and in the year ended June 30, 1894, it was 68.12. For the first two years of service it was 87.65 in 1892, 90.97 in 1893, and 89.28 in 1894.

The following amounts have been collected from enlisted men for clothing overdrawn, and this very largely in the first year of service:

1888-89	\$122,693.84
1889-90	98,418.30
1890-91	62,737.18
1891-92	74,766.25
1892-93	70,632.09
1893-94	68,813.79

While, undoubtedly, disenchantment, homesickness, entanglement, and causes peculiar to individual cases have led many men to abandon the military service at an early period of their engagement, it is believed that these stoppages and the detention of \$4 of the monthly pay of young soldiers during the first year of enlistment have incited to the desertion which has occurred in the early part of their terms of service.

This detention of \$4 per month from the pay of the young soldier is likely, when he finds himself short of pocket money, to lead him into the temptation of realizing cash by sale, at ruinous discount, of clothing drawn or overdrawn upon his allowance.

That the stoppage of these large sums for clothing from the pay of enlisted men does not result from an insufficient allowance is clearly shown by the record that during the same period, as heretofore cited, the Government has paid to soldiers for clothing undrawn:

1888-89	\$277,693.84
1889-90	269,359.96
1890-91	345,151.01
1891-92	350,061.68
1892-93	266,249.09
1893-94	132,981.41

The fact that recruits will hereafter be promptly forwarded to their regiments, and that the least possible amount of clothing will be issued to them till they shall have come under the care of their own captains and lieutenants, will tend, it is believed, to reduce the heavy charges on account of clothing heretofore issued to them at depot and, later, upon joining their regiments.

In my report to the honorable Secretary of War I shall recommend that the law requiring the detention of \$4 per month from the pay of the soldier during the first year of his enlistment be repealed.

THE MILITARY PRISON.

The annual report of the commandant of the military prison and the reports of the other officers on duty,¹ submitted herewith, show in detail the management of the affairs of that institution during the past year and indicate that the duties of these officers have been performed in a satisfactory manner.

The number of prisoners in confinement June 30, 1893, was 458; the number received during the year, 476, and the number discharged, etc., 417, leaving 517 in confinement on June 30, 1894, an increase of 59. The greatest number in confinement at any one time during the year was 626 on March 31, 1894.

The regular appropriation for the year ended June 30, 1894, was \$76,240, and the deficiency act appropriated \$7,234, making in all \$83,474, of which \$79,489.78 was expended. This amount includes the expenditure of \$1,150 for donations of \$5 each to 230 prisoners released from confinement at Alcatraz Island, California, and other military posts, leaving the actual expenditures made at the prison \$78,339.78, an increase of \$7,240.82 over the expenditure for the fiscal year ended June 30, 1893. This is accounted for by the increased number of prisoners confined during the past year, the average number per month having been 553 against 408 for the preceding year.

The prison furnished 189 suits of civilian clothing for prisoners released from confinement at divers military posts.

The prison fund, made up from various earnings from the labor of the prisoners and the sale of miscellaneous material, amounted to \$1,239.54, and this was turned into the United States Treasury on June 30, 1894.

The system of cellular confinement, authorized by the Secretary of War, is now complete, with 488 ordinary cells, 1 cell for each prisoner, except the sick, and 18 stone and 10 iron punishment cells.

The yield of the prison farm, of which 177 acres were cultivated, provided an ample supply of all kinds of vegetables. Some of the principal products were 4,850 bushels of potatoes, 65,000 heads of cabbage, 3,700 bushels of corn, besides large quantities of onions, tomatoes, beans, etc.

The various industries were carried on in a satisfactory manner, but the limited amount of labor required for the Quartermaster's Department taxed the commandant to find proper employment for the prisoners. He therefore commenced an extensive system of sewerage for the prison and put up a brick plant, which he reports will prove useful to the Government and give necessary employment.

The report indicates an existing necessity for supplying increased means for useful industrial training. The principal articles manufactured for the Quartermaster's Department during the year were 300 pairs of boots, 22,773 pairs of shoes, 33 sets of harness, and 26,000 corn brooms; wash boilers, stovepipe, and various articles of tin and iron ware for kitchen purposes. There were 1,813 cords of wood and 55,000 feet of lumber cut by the prisoners.

The total number of days of skilled labor performed by them was 53,034, and the number of days of unskilled labor 118,188. Of these, 26,712 days of skilled and 37,044 days of unskilled labor were performed for the Quartermaster's Department, amounting in value to \$26,321.40.

¹ Omitted.

The report of the prison surgeon shows an unusual amount of sickness and a larger death rate than heretofore—seven prisoners and one member of the guard having died during the year. Some of the cases are ascribed to the water supply from the Missouri River and defective sewerage. Efforts to secure a good supply of pure water by boring wells and to establish improved sewerage have been inaugurated and are in progress.

Every attention has been given to the moral and religious welfare of the prisoners and to the night school. This school has been very successful, with an attendance of 250 scholars five nights of each week.

MILITARY CONVICTS.

Section 1361 of the Revised Statutes provides that convicts confined in the military prisons shall be liable to trial and punishment—under the rules and articles of war—for offenses committed by them during the term of their imprisonment.

The rigid methods of prison discipline, to which alone such offenders are amenable, can not well be so effectually applied as at such places. Convicts retained at military posts to serve their sentence, or pending their removal to the military prison, take advantage of their immunity from trial to corrupt and demoralize garrison prisoners with whom they are necessarily brought into daily contact.

To remedy this at present unavoidable but deplorable evil, I have the honor to recommend that the provisions of the above-quoted section of the Revised Statutes be extended to include all military convicts, both at the posts where they are temporarily held and while en route changing station.

POST LYCEUMS.

The reports from department commanders indicate very clearly an honest and conscientious attempt on the part of all officers concerned to carry out the spirit of General Orders, No. 80, of 1891, establishing post lyceums. There appears substantial agreement of department, regimental, and post commanders in the belief that much benefit is derived from this yearly course of instruction. The unanimity of certain recommendations made by these officers indicates the necessity for a revision of the original order.

The following suggestions in accordance with the recommendations mentioned are submitted:

First. That the classes be composed of officers of like grade only. That when this is found impracticable, from a limited number at a station, captains be excused from recitations, while essays be compulsory upon all officers below the grade of major.

Second. That the latitude heretofore allowed in the selection of subjects for the essays be so curtailed as to concentrate the discussions upon matters of military and professional interest. It is recommended that department commanders prepare, at the proper time, theoretical problems in minor tactics and strategy, questions involving the application of the principles of military and international law and other matters of like nature, and select campaigns from American wars for consideration and discussion during the lyceum season, at every post within their commands, and that, at the close of the lyceum period, the best and second best essay and discussion on all or any of the subjects enumerated above be forwarded for examination and publication by the War Department.

POST EXCHANGES.

The post exchange is at once the soldiers' club and the soldiers' cooperative store. A period of five years has elapsed since the inauguration of the exchange (formerly canteen) system as a substitute for the post trader. On February 1, 1889, there were 88 post traders holding the licenses of the War Department. There are now but 2, viz, at Fort Du Chesne and Fort Washakie. By the act of January 28, 1893, the appointment of traders is prohibited. There are now 87 post exchanges.

The enlisted men of the Army have spent during the last five years in these establishments a sum exceeding \$5,000,000, and of this about \$800,000 has been returned to them in dividends to the organizations to which they belong. This money, with the exception of \$50,000 to \$75,000 expended for gymnastic appliances, on reading room, books, etc., has been used in the improvement of table fare. Each exchange owns its own fixtures and has on hand a stock of merchandise, some cash, and good bills receivable. The value of the assets over liabilities on December 31, 1893, was about \$175,000. This, with the amount of the dividends paid, gives a sum of nearly \$1,000,000 to approximately represent the financial benefits of the system up to date.

In no instance was any money advanced by the Government to establish these exchanges.

FINANCIAL OPERATIONS.

Although the order establishing the canteen (exchange) was promulgated on February 1, 1889, fully six months expired before any considerable number of these establishments were fairly in operation. At the end of the year 1889 53 canteens had been established. By the end of the year 1890 75 canteens had been established. The total receipts for that year were \$984,109.07 and the expenses \$787,437.46. During the year 1891 10 more canteens were established, making the total number 85. The receipts for that year were \$1,194,060.36 and the expenses \$921,620.82. During 1892 8 new canteens were established. The total receipts for that year were \$1,383,310.57, and for 1893 \$1,461,062.82.

The total expenditure for merchandise for the year 1890 was \$684,610.97; for 1891, \$810,926.80; for 1892, \$926,969.27; for 1893, \$912,947.40. The operating expenses for the year 1890 were \$69,718.81; for 1891, \$92,246.42; for 1892, \$108,968.04; for 1893, \$129,974.43. The amount expended on account of fixtures in 1889 was \$6,818.92; in 1890, \$33,107.63; in 1891, \$17,447.60; in 1892, \$18,595.95; in 1893, \$19,316.66; a total amount of very nearly \$100,000.

The percentage of operating expenses has been about the same for each year since its establishment, to wit: For the year 1890, 9 per cent; for 1891, 10 per cent; for 1892, 10 per cent, and for 1893, 12½ per cent. The increase in 1893 was occasioned by the substitution at many posts of civilians for enlisted attendants. The net profit in the year 1889 amounted to \$6,704.13; in 1890, \$132,520.02; in 1891, \$201,883.29; in 1892, \$225,656.32, and in 1893, \$226,290.04. The percentage of profits has varied but very little during the past five years. It was 16 per cent during the year 1890, 17 per cent in 1891, 16.5 per cent in 1892, and 15.8 per cent in 1893.

Of the 85 post commanders who reported December 31, 1893, on the post exchange, 76 unhesitatingly pronounce it of benefit to discipline, 7 express no opinion, and 2 only oppose the institution.



Subsistence Department.....	36				
Medical Department.....	183				
Pay Department.....	31				
Corps of Engineers.....	b 120				
Ordnance Department.....	3	56			
Signal Corps.....		10			
Post-chaplains.....		30			
Chief of Record and Pension Office.....		1			
First Regiment of Cavalry.....	44	1	1	1	
Second Regiment of Cavalry.....	43	1	1	1	
Third Regiment of Cavalry.....	43	1	1	1	
Fourth Regiment of Cavalry.....	43	1	1	1	
Fifth Regiment of Cavalry.....	43	1	1	1	
Sixth Regiment of Cavalry.....	43	1	1	1	
Seventh Regiment of Cavalry.....	43	1	1	1	
Eighth Regiment of Cavalry.....	44	1	1	1	
Ninth Regiment of Cavalry.....	44	1	1	1	
Tenth Regiment of Cavalry.....	44	1		1	
Aggregate of cavalry.....	434	10	9	10	
First Regiment of Artillery.....	56	1	1	1	
Second Regiment of Artillery.....	57	1	1	1	
Third Regiment of Artillery.....	56	1	1	1	
Fourth Regiment of Artillery.....	56	1	1	1	
Fifth Regiment of Artillery.....	56	1	1	1	
Aggregate of artillery.....	281	5	5	5	
First Regiment of Infantry.....	35	1		1	
Second Regiment of Infantry.....	35	1	1	1	
Third Regiment of Infantry.....	35	1	1	1	
Fourth Regiment of Infantry.....	35	1	1	1	
Fifth Regiment of Infantry.....	35	1	1	1	
Sixth Regiment of Infantry.....	35	1	1	1	
Seventh Regiment of Infantry.....	35	1	1	1	
Eighth Regiment of Infantry.....	35	1	1	1	
Ninth Regiment of Infantry.....	35	1	1	1	
Tenth Regiment of Infantry.....	35	1	1	1	
Eleventh Regiment of Infantry.....	35	1	1	1	
Twelfth Regiment of Infantry.....	35	1	1	1	
Thirteenth Regiment of Infantry.....	35	1	1	1	
Fourteenth Regiment of Infantry.....	35	1	1	1	
Fifteenth Regiment of Infantry.....	35	1	1	1	
Sixteenth Regiment of Infantry.....	35	1	1	1	
Seventeenth Regiment of Infantry.....	35	1	1	1	
Eighteenth Regiment of Infantry.....	35	1	1	1	
Nineteenth Regiment of Infantry.....	45	1	1	1	
Twentieth Regiment of Infantry.....	35	1	1	1	
Twenty-first Regiment of Infantry.....	35	1	1	1	
Twenty-second Regiment of Infantry.....	35	1	1	1	
Twenty-third Regiment of Infantry.....	35	1	1	1	
Twenty-fourth Regiment of Infantry.....	35	1	1	1	
Twenty-fifth Regiment of Infantry.....	35		1	1	
Aggregate of infantry.....	877	24	24	25	
West Point detachments.....					
Guard at military prison.....					
Recruits at depots and en route.....					
Indian scouts.....					
General-service clerks and messengers.....					
Grand aggregate.....	3	2,146	30	38	40
Military Academy.....					
Retired.....		417	3	3	3

their corps or regiments, are excluded
engineers, being included in the strength

POST SCHOOLS.

The present system was established in years past for the improvement of the large number of men then in the ranks found lacking in rudimentary education. Faithfully carried out with the means at hand under the supervision of the assistant adjutant-general of each of the several military departments its success, as a whole, has been fairly good, notwithstanding inherent defects and imperative needs repeatedly pointed out but never remedied.

The intelligence of the soldier to-day and the effect of recent legislation governing future enlistments in the Army, will undoubtedly cause the existing defective system to give place to the purely professional school, which shall provide a course of systematic instruction in such military subjects of general and special nature as shall be of practical advantage to the enlisted man in his career as a soldier.

It is recommended that compulsory attendance at post schools be no longer required.

LAUNDRIES.

The improved clothing issued to the soldier involves increased expenditure on his part for washing white blouses, trousers, linen collars, sheets, and pillowcases, and this is especially the case in southern latitudes. As the troops are required to keep the authorized duck clothing, as well as bed furniture, in neat and clean condition, it is but justice to them that the charges against their pay on this account be reduced to the minimum, and with this end in view the establishment of post laundries, under proper management, at all permanent posts, is earnestly recommended.

As company laundresses are no longer authorized, the Government should afford all possible facilities, at the least expense to the soldier, for presenting a clean and soldierly appearance at all times.

CHANGE OF UNIFORM.

The officers of the line are not satisfied with the present blouse. When a change of uniform shall come to be considered, it is suggested that the same pattern of coat be made to serve for both dress and undress purposes; that with shoulder straps it be undress and with shoulder knots full dress. A coat that is used for dress purposes only, becomes faded and threadbare while yet serviceable, and when so is shabby upon parade. With a first best and a second best coat of one pattern, the first best is naturally displayed upon ceremonies, and both officers and men come upon parade without liability to criticism for the unsightliness of their uniforms. Then one coat for both dress and undress would obviate the necessity of carrying two, as at present, when on detached service for short periods with limited transportation.

Respectfully submitted.

GEO. D. RUGGLES,
Adjutant-General.

Maj. Gen. JOHN M. SCHOFIELD,
Commanding the Army.

B.—Position and distribution of troops, by departments, taken

POSTS.	SITUATIONS.	COMMANDING OFFICER.	Number of companies.	GARRISONS.	PRESENT.				
				Regiments.	General officers.	Aids-de-camp.	Inspectors-general.	Bureau of Military Justice.	
<i>Department of the East.</i>									
Headquarters.....	Governors Island, New York.	Maj. Gen. O. O. Howard ..		Department staff.	1	3	2	1	1
Fort Preble, Me	Portland	Capt. R. M. Rogers, 2d Art.	1	2d Art.....					
Fort Adams, R. I.	Near Newport.....	Col. R. Loder, 2d Art....	4	2d and 4th Art.					
Fort Warren, Mass.	Boston Harbor.....	Maj. W. Sinclair, 2d Art..	2	2d Art.....					
Fort Trumbull, Conn.	New London.....	Capt. J. H. Calef, 2d Art..	1	2d Art.....					
Fort Columbus, N. Y.	Governors Island...	Maj. W. L. Haskin, 1st Art.	3	1st Art.....					
Fort Hamilton, N. Y.	New York Harbor..	Col. L. L. Langdon, 1st Art.	4	1st Art					
Fort Wood, N. Y.	Bedloes Island.....	Capt. A. M. Wetherill, 6th Inf.	1	6th Inf					
Fort Wadsworth, N. Y.	New York Harbor..	Maj. J. Egan, 1st Art	3	1st Art					
Fort Schuyler, N. Y.	Throggs Neck.....	Maj. C. A. Woodruff, 2d Art.	2	2d Art.....					
Madison Barracks, N. Y.	Sacketts Harbor....	Col. C. G. Bartlett, 9th Inf.	7	9th Inf					
Plattsburg Barracks, N. Y.	Plattsburg.....	Lieut. Col. W. J. Lyster, 21st Inf.	3	21st Inf.....					
Fort Niagara, N. Y. ..	Youngstown.....	Col. H. Jewett, 21st Inf...	3	21st Inf.....					
Fort Ontario, N. Y. ...	Oswego.....	Capt. J. Regan, 9th Inf...	1	9th Inf.....					
Fort Porter, N. Y.	Buffalo	Maj. J. W. Powell, jr., 21st Inf.	2	21st Inf.....					
Washington Barracks, D. C.	Washington	Col. H. W. Cloason, 4th Art.	5	3d and 4th Art.					
Fort Myer, Va	Near Washington, D. C.	Lieut. Col. G. V. Henry, 7th Cav.	4	1st, 5th, 6th, and 9th Cav.					
Fort McHenry, Md. ..	Baltimore.....	Maj. G. B. Rodney, 4th Art.	3	4th Art.....					
Fort Monroe, Va.....	.....	Lieut. Col. R. T. Frank, 2d Art.	3	1st, 2d, 3d, 4th, and 6th Art.					
Newport Barracks, Ky.	Newport.....	Maj. W. M. Wherry, 6th Inf.	1	6th Inf.....					
Fort Thomas, Ky.	Near Newport.....	Col. M. A. Cochran, 6th Inf.	6	6th Inf.....					
Fort McPherson, Ga.	Atlanta.....	Col. L. L. Livingston, 3d Art.	4	3d Art.....					
Jackson Barracks, La.	New Orleans.....	Lieut. Col. W. L. Kellogg, 5th Inf.	2	5th Inf.....					
Mount Vernon Barracks, Ala.	Mount Vernon.....	Capt. H. K. Bailey, 5th Inf.	3	5th and 12th Inf.					
Fort Barrancas, Fla.	Pensacola	Capt. James Chester, 3d Art.	2	3d Art.....					
St. Francis Barracks, Fla.	St. Augustine.....	Col. N. W. Osborne, 5th Inf.	2	5th Inf.....					
Key West Barracks, Fla.	.....	Capt. J. R. Myrick, 3d Art.	2	3d Art.....					
Total, Department of the East			79		1	3	2	1	1
<i>Department of the Missouri.</i>									
Headquarters.....	Chicago	Maj. Gen. N. A. Miles		Department staff.	1	3	1	1	1
Fort Sheridan, Ill.	Highwood	Col. R. E. A. Crofton, 15th Inf.	19	3d, 6th, and 7th Cav., 1st Art., and 15th Inf.					

B.—Position and distribution of troops, by departments, taken from

POSTS.	SITUATIONS.	COMMANDING OFFICER.	GARRISONS.		PRESENT.					
			Number of companies.	Regiments.	General officers.	Aids-de-camp.	Adjutant-General's Department.	Inspectors-general.	Bureau of Military Justice.	
Department of the Missouri—Cont'd.										
Fort Wayne, Mich....	Detroit	Col. S. Snyder, 19th Inf..	4	19th Inf.....						
Fort Brady, Mich....	Sault Ste. Marie	Lieut. Col. C. A. Wikoff, 19th Inf.	3	19th Inf.....						
Fort Mackinac, Mich.	Michilimackinac Island.	Maj. C. E. Bennett, 19th Inf.	1	19th Inf.....						
Fort Leavenworth, Kans.	.....	Col. E. F. Townsend, 12th Inf.	12	2d, 6th, 8th, and 10th Cav., and 5th, 7th, 10th, 12th, 13th, and 14th Inf.						
Fort Riley, Kans	Junction City	Col. J. W. Forsyth, 7th Cav.	7	7th Cav. and 2d and 4th Art.						
Fort Reno, Okla	Near Cheyenne Agency.	Lieut. Col. G. A. Purington, 3d Cav.	5	3d Cav. and 13th Inf.						
Fort Sill, Okla	65 miles north of Henrietta, Tex.	Col. A. T. Smith, 13th Inf.	5	3d and 7th Cav. and 13th Inf.						
Fort Supply, Okla....	16 miles from Woodward.	Lieut. Col. D. Parker, 13th Inf.	4	3d Cav. and 13th Inf.						
Total Department of the Missouri.....			60	.....	1	3	1	1	1	1
Department of Dakota.										
Headquarters	St. Paul, Minn.....	Brig. Gen. Wesley Merritt.	..	Department staff.	1	2	1			
Fort Snelling, Minn .	Near St. Paul.....	Col. E. C. Mason, 3d Inf.	9	3d Inf						
Fort Sully, S. Dak ...	25 miles from Pierre.	Maj. J. H. Gageby, 12th Inf.	3	12th Inf.....						
Fort Meade, S. Dak..	Near Sturgis	Col. C. H. Carlton, 8th Cav.	7	3d and 8th Cav.						
Fort Yates, N. Dak..	60 miles from Bismarck.	Lieut. Col. R. Comba, 12th Inf.	5	8th Cav. and 12th Inf.						
Fort Pembina, N. Dak.	Near Pembina.....	Capt. C. W. Miner, 22d Inf.	1	22d Inf						
Fort Buford, N. Dak.	.....	Maj. L. Wheaton, 20th Inf.	5	10th Cav. and 20th and 25th Inf						
Fort Keogh, Mont...	Near Miles City....	Col. P. T. Swaine, 22d Inf.	8	8th and 10th Cav. and 22d Inf.						
Fort Custer, Mont...	32 miles from Custer Station.	Lieut. Col. D. Perry, 10th Cav.	7	1st and 10th Cav. and 25th Inf.						
Fort Assinniboine, Mont.	Near Assinniboine..	Col. W. H. Penrose, 20th Inf.	10	10th Cav. and 20th Inf.						
Fort Missoula, Mont.	Missoula.....	Col. A. S. Burt, 25th Inf..	4	25th Inf.....						
Camp Merritt, Mont.	Near Lama Deer....	Capt. J. McA. Webster, 22d Inf.	1	22d Inf.....						
Fort Yellowstone, Wyo.	Yellowstone Park...	Capt. G. S. Anderson, 6th Cav.	2	6th Cav.....						
Total Department of Dakota.....			62	.....	1	2	1			

the latest returns on file in the Adjutant-General's Office, 1894—Continued.

PRESENT.															ABSENT.							AGGREGATE.						
Quartermaster's Department.	Subsistence Department.	Medical Department.	Pay Department.	Corps of Engineers.	Ordnance Department.	Post chaplains.	Colonels.	Lieutenant-colonels.	Majors.	Captains.	Regimental chaplains.	Regimental adjutants.	Regimental quartermasters.	Subalterns.	Enlisted men.	Total commissioned.	Aggregate.	General and staff officers.	Field and regimental staff officers.	Captains.	Subalterns.	Total commissioned.	Aggregate.	Commissioned officers.	Enlisted men.	Aggregate.		
1	1	1	1	1	1	1	1	1	2	3	1	1	1	3	251	17	268	1	1	1	4	6	5	11	22	257	270	
1	1	1	1	1	1	1	1	1	2	3	1	1	1	3	173	8	180	1	1	1	3	2	3	5	11	174	185	
1	1	1	1	1	1	1	1	1	2	3	1	1	1	1	65	4	69	1	1	1	1	1	1	5	65	70		
1	3	1	1	1	1	1	1	2	2	3	1	1	1	50	677	70	747	1	1	4	9	37	13	50	88	714	797	
1	2	1	1	1	1	1	1	2	7	7	1	1	1	15	512	80	542	1	1	1	3	67	5	72	35	579	614	
2	1	1	1	1	1	1	1	5	1	1	1	1	1	4	297	16	312	1	1	1	3	14	10	24	25	311	326	
2	1	1	1	1	1	1	1	2	5	5	1	1	1	6	299	19	318	1	1	2	3	20	10	30	29	319	349	
3	1	1	1	1	1	1	1	4	1	1	1	1	1	5	226	13	239	1	1	3	7	3	10	10	233	249		
5	1	21	4	1	5	6	5	11	59	59	7	6	121	3,586	250	3,845	1	1	9	49	179	1	239	319	3,765	4,084		
3	1	2	3	1	1	1	1	1	1	1	1	1	1	1	15	15	15	1	1	1	1	1	1	1	15	15		
2	1	1	1	1	1	1	1	1	7	7	1	1	1	15	491	29	520	1	1	3	5	20	9	29	38	511	540	
1	1	1	1	1	1	1	1	1	2	2	1	1	1	4	178	9	187	1	1	1	2	9	3	12	12	167	190	
2	1	1	1	1	1	1	1	1	5	5	1	1	1	9	361	21	382	1	1	3	7	30	11	41	32	391	422	
2	1	1	1	1	1	1	1	1	5	5	1	1	1	4	254	13	267	1	1	6	1	24	6	30	10	278	297	
1	1	1	1	1	1	1	1	1	4	4	1	1	1	2	55	3	58	1	1	1	1	11	1	11	3	66	69	
1	1	1	1	1	1	1	1	1	4	4	1	1	1	5	299	12	311	1	1	1	5	12	6	18	18	311	320	
2	1	1	1	1	1	1	1	1	5	5	1	1	1	6	451	22	473	1	1	4	12	42	16	58	38	493	531	
2	1	1	1	1	1	1	1	1	4	4	1	1	1	8	384	19	403	1	1	4	8	9	13	22	32	393	425	
3	1	1	1	1	1	1	1	1	9	9	1	1	1	9	530	24	554	1	1	3	13	51	17	68	41	531	622	
1	1	1	1	1	1	1	1	1	5	5	1	1	1	6	240	16	256	1	1	1	6	8	7	15	23	254	277	
1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	49	8	57	1	1	1	1	10	1	10	3	59	62	
1	1	1	1	1	1	1	1	1	2	2	1	1	1	4	116	7	123	1	1	1	1	4	1	4	7	120	127	
3	1	19	3	1	6	5	3	8	50	50	2	6	6	77	3,414	193	3,607	1	1	3	20	64	220	88	318	281	3,644	3,925

B.—Position and distribution of troops, by departments, taken from

POSTS.	SITUATIONS.	COMMANDING OFFICER.	Number of companies.	GARRISONS.	PRESENT.				
				Regiments.	General officers.	Aids-de-camp.	Adjutant-General's Department.	Inspectors-general.	Bureau of Military Justice.
<i>Department of the Platte.</i>									
Headquarters.....	Omaha, Nebr.....	Brig. Gen. J. R. Brooke ..	..	Department staff.	1	2	1	..	..
Fort Omaha, Nebr...	Near Omaha.....	Col. J. C. Bates, 2d Inf ...	0	2d and 21st Inf.	..	..	..	..	..
Fort Niobrara, Nebr.	Near Valentine	Maj. F. E. Lacey, 8th Inf.	4	6th Cav. and 8th Inf.	..	..	..	..	..
Fort Robinson, Nebr.	.....	Col. J. Biddle, 9th Cav ...	8	9th Cav. and 8th Inf.	..	..	..	..	..
Fort McKinney, Wyo.	33 miles from Clearmont.	Col. J. J. Van Horn, 8th Inf.	5	6th Cav. and 8th Inf.	..	..	..	..	..
Fort D. A. Russell, Wyo.	Near Cheyenne.....	Col. J. S. Poland, 17th Inf.	8	17th Inf.....	..	..	..	..	..
Fort Washakie, Wyo.	Near Shoshone Agency.	Maj. A. Kramer, 6th Cav.	2	6th Cav. and 8th Inf.	..	..	..	..	..
Camp Pilot Butte, Wyo.	Rock Springs.....	2d Lieut. J. R. M. Taylor, 7th Inf.	1	7th Inf.....	..	..	..	..	..
Total, Department of the Platte			37	.....	1	2	1	..	..
<i>Department of the Colorado.</i>									
Headquarters.....	Denver, Colo.....	Brig. Gen. E. McD. McCook.	..	Department staff.	1	2	1	1	..
Fort Logan, Colo	Near Denver.....	Col. H. C. Merriam, 7th Inf.	6	7th Inf.....	..	..	..	..	..
Fort DuChesne, Utah.	Near Uintah Agency	Maj. J. F. Randlett, 9th Cav.	2	9th Cav.....	..	..	..	..	..
Fort Douglas, Utah..	Near Salt Lake City.	Lieut. Col. E. M. Coates, 16th Inf.	8	16th Inf.....	..	..	..	..	..
Fort Marcy, N. Mex.	Santa Fe.....	Col. E. P. Pearson, 10th Inf.	2	10th Inf.....	..	..	..	..	..
Fort Wingate, N. Mex.	Near Wingate.....	Col. G. G. Hunt, 2d Cav.	7	2d Cav. and 10th Inf.	..	..	..	..	..
Fort Stanton, N. Mex.	9 miles from Lincoln.	Maj. A. H. Bainbridge, 10th Inf.	2	10th Inf.....	..	..	..	..	..
Fort Bayard, N. Mex.	Near Halls.....	Col. Z. R. Bliss, 24th Inf..	6	1st Cav. and 24th Inf.	..	..	..	..	..
Fort Bowie, Ariz.....	13 miles from Bowie Station.	Maj. T. McGregor, 2d Cav.	2	2d Cav.....	..	..	..	..	..
Fort Grant, Ariz.....	27 miles from Willcox.	Col. A. K. Arnold, 1st Cav.	5	1st Cav.....	..	..	..	..	..
Fort Huachuca, Ariz.	Near Huachuca Station.	Lieut. Col. D. D. Van Valzah, 24th Inf.	6	2d Cav. and 24th Inf.	..	..	..	..	..
Fort Apache, Ariz...	90 miles from Holbrook.	Maj. H. Carroll, 1st Cav..	3	1st Cav. and 11th Inf.	..	..	..	..	..
San Carlos, Ariz	102 miles from Willcox	Capt. A. L. Myer, 11th Inf.	3	1st Cav. and 11th Inf.	..	..	..	..	..
Whipple Barracks, Ariz.	Prescott	Col. J. D. DeRussy, 11th Inf.	4	11th Inf.....	..	..	..	..	..
Total, Department of the Colorado			56	.....	1	2	1	1	..
<i>Department of Texas.</i>									
Headquarters.....	San Antonio, Tex...	Brig. Gen. Frank Wharton.	..	Department staff.	1	2	1	1	..
Fort Sam Houston, Tex.	San Antonio.....	Col. J. F. Wade, 5th Cav...	9	5th and 7th Cav., 3d Art., 5th and 18th Inf.	..	..	..	..	..

the latest returns on file in the Adjutant-General's Office, 1894—Continued.

B.—Position and distribution of troops, by departments, taken from

POSTS.	SITUATIONS.	COMMANDING OFFICER.	GARRISONS.		PRESENT.					
			Number of companies.	Regiments.	General officers.	Aids-de-camp.	Adjutant-General's Department.	Inspectors-General.	Bureau of Military Justice.	
Department of Texas—Continued.										
Fort Brown, Tex	Brownsville	Maj. H. Wagner, 5th Cav.	2	5th Cav. . . . .	..	..	..	..	..	..
Fort Ringgold, Tex ..	Rio Grande City....	Maj. A. S. B. Keyes, 3d Cav.	3	5th Cav. and 23d Inf.	..	..	..	..	..	..
Fort McIntosh, Tex..	Laredo.....	Capt. G. A. Goodale, 23d Inf.	3	5th Cav. and 23d Inf.	..	..	..	..	..	..
Fort Clark, Tex.....	Brackettville	Col. J. J. Coppinger 23d Inf.	8	5th Cav. and 23d Inf.	..	..	..	..	..	..
Fort Hancock, Tex ..	Hancock.....	Capt. H. Jackson, 7th Cav.	1	7th Cav.....	..	..	..	..	..	..
Fort Bliss, Tex	El Paso.....	Capt. W.H. McLaughlin, 18th Inf.	4	18th Inf.....	..	..	..	..	..	..
Camp Eagle Pass, Tex.	Eagle Pass.....	Capt. W. S. Edgerly, 7th Cav.	1	7th Cav . . . . .	..	..	..	..	..	..
Total, Department of Texas			31	.....	1	2	1	1	..	..
Department of California.										
Headquarters.....	San Francisco, Cal ..	Brig. Gen. T. H. Ruger...	..	Department staff.	1	1	1	..	1	..
Fort Mason, Cal.....	San Francisco	Capt. G. W. Crabb, 5th Art.	1	5th Art . . . . .	..	..	..	..	..	..
Presidio, Cal.....	San Francisco	Col. W. M. Graham, 5th Art.	8	4th Cav. and 5th Art.	..	..	..	..	..	..
Alcatraz Island, Cal .	San Francisco Harbor.	Lt. Col. F. L. Guenther, 5th Art.	2	5th Art . . . . .	..	..	..	..	..	..
Angel Island, Cal....	San Francisco Harbor.	Col. W. R. Shafter, 1st Inf.	5	1st Inf.....	..	..	..	..	..	..
Benicia Barracks, Cal.	Benicia	Lt. Col. J. S. Casey, 1st Inf.	3	1st Inf.....	..	..	..	..	..	..
San Diego Barracks, Cal.	San Diego	Lt. Col. E. R. Kellogg, 10th Inf.	1	10th Inf.....	..	..	..	..	..	..
Sequoia National Park, Cal.	.....	1st Lt. A. T. Dean, 4th Cav.	1	4th Cav.....	..	..	..	..	..	..
Yosemite National Park, Cal.	.....	Capt. G. H. G. Gale, 4th Cav.	1	4th Cav.....	..	..	..	..	..	..
Total, Department of California.....			22	.....	1	1	1	..	1	..
Department of the Columbia.										
Headquarters.....	Vancouver Barracks, Wash.	Brig. Gen. E. S. Otis . . . . .	..	Department staff.	1	1	1	..	..	..
Fort Canby, Wash...	Mouth of Columbia River.	Capt. S. A. Day, 5th Art..	2	5th Art . . . . .	..	..	..	..	..	..
Fort Walla Walla, Wash.	Walla Walla.....	Col. C. E. Compton, 4th Cav.	3	4th Cav.....	..	..	..	..	..	..
Fort Spokane, Wash.	Near Spokane Falls.	Maj. G. S. Carpenter, 4th Inf.	3	4th Inf.....	..	..	..	..	..	..
Fort Townsend, Wash.	Port Townsend.....	Capt. J. Murphy, 14th Inf.	1	14th Inf.....	..	..	..	..	..	..
Fort Sherman, Idaho.	Cœur d'Alene.....	Col. R. H. Hall, 4th Inf...	5	4th Cav. and 4th Inf.	..	..	..	..	..	..
Boise Barracks, Idaho.	Boise City	Maj. M. Cooney, 4th Cav .	2	4th Cav. and 4th Inf.	..	..	..	..	..	..
Vancouver Barracks, Wash.	Vancouver.....	Col. T. M. Anderson, 14th Inf.	7	4th Cav. and 14th Inf.	..	..	..	..	..	..
Total, Department of the Columbia..			23	.....	1	1	1	..	..	..

the latest returns on file in the Adjutant-General's Office, 1894—Continued.

PRESENT.														ABSENT.						AGGREGATE.							
Quartermaster's Department.	Subalterns Department.	Medical Department.	Pay Department.	Corps of Engineers.	Ordnance Department.	Post chaplains.	Colonels.	Lieutenant-colonels.	Majors.	Captains.	Regimental chaplains.	Regimental adjutants.	Regimental quartermasters	Subalterns.	Enlisted men.	Total commissioned.	Aggregate.	General and staff officers.	Field and regimental staff officers.	Captains.	Subalterns.	Enlisted men.	Total commissioned.	Aggregate.	Commissioned officers.	Enlisted men.	Aggregate.
1	1	1	1	1	1	1	1	1	1	2	1	1	1	2	109	6	115	...	...	...	2	11	2	13	8	130	138
1	1	1	1	1	1	1	1	1	1	3	1	1	1	4	184	9	193	...	...	...	2	16	2	18	11	200	211
1	1	1	1	1	1	1	1	1	1	2	1	1	1	3	158	6	164	1	1	1	3	15	6	21	12	173	185
2	1	1	1	1	1	1	1	1	1	6	1	1	1	7	457	20	477	...	2	4	10	25	16	41	36	482	518
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	59	3	62	...	...	...	1	3	1	4	4	62	66
2	1	1	1	1	1	1	1	1	1	6	1	1	1	5	247	14	261	...	2	1	...	12	3	15	17	259	276
1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	57	4	61	...	...	...	...	1	...	1	4	58	62
2	1	12	3	1	1	2	1	4	31	...	3	3	3	36	1,781	104	1,885	1	6	8	28	115	43	158	147	1,906	2,053
1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	...	11	11	...	...	...	...	...	...	...	11	...	11
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	62	3	65	...	...	...	2	2	2	4	5	64	69
3	1	1	1	1	1	1	1	1	1	7	1	1	1	10	501	24	525	...	1	1	12	8	14	22	38	509	547
1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	102	5	107	...	...	1	4	9	5	14	10	111	121
2	1	1	1	1	1	1	1	1	1	2	1	1	1	10	312	18	330	...	...	5	4	5	9	14	27	317	344
1	1	1	1	1	1	1	1	1	1	1	1	1	1	5	172	8	180	...	...	2	1	5	3	8	11	177	188
1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	61	4	65	...	...	...	...	4	...	4	4	65	69
1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	46	3	49	...	...	1	...	6	1	7	4	52	56
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	59	3	62	...	...	...	1	1	1	2	4	60	64
1	1	11	2	2	2	2	2	4	14	...	2	2	2	34	1,315	79	1,394	...	1	10	24	40	35	75	114	1,355	1,469
1	1	1	3	1	1	1	1	1	1	...	...	...	...	1	...	13	13	...	...	...	...	...	...	...	13	...	13
1	1	1	1	1	1	1	1	1	1	2	1	1	1	2	112	5	117	...	...	...	4	5	4	9	9	117	126
1	1	1	1	1	1	1	1	1	1	2	1	1	1	5	173	13	186	...	1	3	...	16	4	20	17	189	206
1	1	1	1	1	1	1	1	1	1	3	1	1	1	4	175	10	185	...	...	...	2	9	2	11	12	184	196
1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	60	4	64	...	...	...	...	4	...	4	4	64	68
2	1	1	1	1	1	1	1	1	1	4	1	1	1	8	293	17	310	...	1	3	6	11	10	21	27	304	331
1	1	1	1	1	1	1	1	1	1	2	1	1	1	2	109	6	115	...	...	...	2	7	2	9	8	116	124
2	1	1	1	1	1	1	1	1	1	6	1	1	1	11	388	24	412	...	...	3	7	42	10	52	34	430	464
3	1	10	3	2	2	2	2	4	20	...	3	3	3	35	1,310	92	1,402	...	2	9	21	94	32	126	124	1,404	1,528

C.—*Military commands and posts, with post-offices, telegraph stations, and nearest railroad stations or boat landings.*

ARMY OF THE UNITED STATES.

Headquarters, Washington, D. C., Maj. Gen. JOHN M. SCHOFIELD, commanding.

DEPARTMENT OF THE EAST.

Maj. Gen. OLIVER O. HOWARD, commanding. Headquarters, Governors Island, New York Harbor.

Geographical limits.—The New England States, States of New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida, Louisiana, Mississippi, Alabama, Kentucky, Tennessee, Ohio, and the District of Columbia.

DEPARTMENT OF THE MISSOURI.

Maj. Gen. NELSON A. MILES, commanding. Headquarters, Chicago, Ill.

Geographical limits.—States of Michigan, Wisconsin, Indiana, Illinois, Missouri, Kansas, and Arkansas, Indian and Oklahoma Territories.

DEPARTMENT OF TEXAS.

Brig. Gen. FRANK WHEATON, commanding. Headquarters, San Antonio, Tex.

Geographical limits.—State of Texas.

DEPARTMENT OF CALIFORNIA.

Brig. Gen. THOMAS H. RUGER, commanding. Headquarters, San Francisco, Cal.

Geographical limits.—States of California and Nevada.

DEPARTMENT OF DAKOTA.

Brig. Gen. WESLEY MERRITT, commanding. Headquarters, St. Paul, Minn.

Geographical limits.—States of Minnesota, South Dakota (excepting so much as lies south of the forty-fourth parallel), North Dakota, and Montana, and the post of Fort Yellowstone, Wyo.

DEPARTMENT OF THE PLATTE.

Brig. Gen. JOHN R. BROOKE, commanding. Headquarters, Omaha, Nebr.

Geographical limits.—States of Iowa, Nebraska, and Wyoming (excepting the post of Fort Yellowstone, Wyo.), so much of Idaho as lies east of a line formed by the extension of the western boundary of Utah to the northeastern boundary of Idaho, and so much of South Dakota as lies south of the forty-fourth parallel.

DEPARTMENT OF THE COLORADO.

Brig. Gen. ALEXANDER MCD. MCCOOK, commanding. Headquarters, Denver, Colo.

Geographical limits.—State of Colorado and the Territories of Utah, Arizona, and New Mexico.

DEPARTMENT OF THE COLUMBIA.

Brig. Gen. ELWELL S. OTIS, commanding. Headquarters, Vancouver Barracks, Wash.

Geographical limits.—States of Oregon, Washington, and Idaho, and Alaska Territory, excepting so much of Idaho as is embraced in the Department of the Platte.

POSTS.

[Those not garrisoned are indicated thus *.]

- Adams, Fort, R. I.* (Dept. East).—P. O., R. R. and tel. stn. Newport, R. I.; boat from Newport, dist. 3 m.
- Alcatraz Island, Cal.* (Dept. Cal.).—P. O. same; tel. and R. R. stn. San Francisco, Cal., dist. 4 m.; Govt. steamer daily (except Sunday) to post.
- Angel Island, Cal.* (Dept. Cal.).—P. O. and tel. stn. same; R. R. stn. San Francisco, Cal., dist. 7 m.; Govt. steamer daily (except Sunday) to post.
- Apache, Fort, Ariz.* (Dept. Colo.).—P. O. and tel. stn. same; buckboard daily from Holbrook, on A. and P. R. R., dist. 90 m.
- Army and Navy General Hospital, Ark.*—P. O., tel. and R. R. stn. Hot Springs, Ark.
- Assinniboine, Fort, Mont.* (Dept. Dak.).—P. O. same; tel. and R. R. stn. (G. N. R.) Assinniboine, Mont., dist. 1½ miles.
- Barrancas, Fort, Fla.* (Dept. East).—P. O. Warrington, Fla.; tel. stn. Pensacola Navy-Yard, Fla.; R. R. stn. at post.
- Bayard, Fort, N. Mex.* (Dept. Colo.).—P. O. and tel. stn. same; R. R. stn. (S. C. and N. R. R.) Halls, dist. 3 m.
- Benicia Barracks, Cal.* (Dept. Cal.).—P. O., tel. stn., R. R. stn, and boat landing Benicia, Cal., dist. 1 m.
- Bliss, Fort, Tex.* (Dept. Tex.).—P. O., tel. and R. R. stn. El Paso, Tex., dist. 6 m.
- Boise Barracks, Idaho* (Dept. Columbia).—P. O., tel. and R. R. stn. Boise City, Idaho.
- * *Bowie, Fort, Ariz.* (Dept. Colo.).—P. O. and tel. stn. same; daily buckboard (except Sundays) from Bowie Station, Ariz., on S. P. R. R., dist. 13 m.
- Brady, Fort, Mich.* (Dept. Mo.).—P. O., tel. and R. R. stn. Sault Ste. Marie, Mich., dist. 1 m.
- Brown, Fort, Tex.* (Dept. Tex.).—P. O., tel. and R. R. stn. (R. G. R. R.) Brownsville, Tex.
- Buford, Fort, N. Dak.* (Dept. Dak.).—P. O., tel. and R. R. stn. (G. N. R. R.) same.
- Canby, Fort, Wash.* (Dept. Columbia).—P. O. and tel. stn. at post; daily steamer from Portland, Oreg., to Astoria, dist. 98 m., and thence by steam tug daily (except Sunday) to post, dist. 14 m.
- * *Carroll, Fort, Md.*—(P. O. and tel. stn. Baltimore, Md., dist. 6½ m. by water from Light st. wharf.
- * *Caswell, Fort, N. C.*—P. O. and tel. stn. Southport, N. C., dist. 2 m.; steamer daily from Wilmington to Southport, dist. 22 m.
- Clark, Fort, Tex.* (Dept. Tex.).—P. O. Brackettville, Tex.; tel. stn. Fort Clark, via Spofford Junction, Tex.; daily stage from Spofford Junction, on S. P. R. R., dist. 9 m.
- * *Clarks Point, Mass., fort at.*—P. O. and tel. stn. New Bedford, Mass., dist. 4 m.
- * *Clinch, Fort, Fla.*—P. O., tel. and R. R. stn. Fernandina, Fla., dist. 3 m.
- Columbus Barracks, Ohio* (Dept. East).—P. O. and R. R. stn. Columbus, Ohio; tel. stn. at post.
- Columbus, Fort, N. Y.* (Dept. East).—P. O. and tel. stn. Governors Island, N. Y. City; Govt. steamer to post.
- * *Constitution, Fort, N. H.*—P. O. New Castle, N. H.; tel. and R. R. stn. Portsmouth, N. H.; stage or steamer from Portsmouth, dist. 3 m.
- Custer, Fort, Mont.* (Dept. Dak.).—P. O. and tel. stn. same; daily stage from Custer Station, on N. P. R. R., dist. 32 m.
- D. A. Russell, Fort, Wyo.* (Dept. Platte).—P. O., tel. and R. R. stn. (U. P., D. and G.) Fort Russell, Wyo.
- David's Island, N. Y.* (Dept. East).—P. O. same; tel. stn. New Rochelle, N. Y.; horse-car and boat from New Rochelle, dist. 3 m.
- * *Delaware, Fort, Del.*—P. O. and tel. stn. Delaware City, Del.; daily steamer from Philadelphia to Delaware City, dist. 2 m. from post.
- Douglas, Fort, Utah* (Dept. Colo.).—P. O., tel. and R. R. stn. Salt Lake City, Utah, dist. 3 m.; city railway to post.
- Du Chesne, Fort, Utah* (Dept. Colo.).—P. O. and tel. stn. same; R. R. stn. (R. G. W. R. R.) Prices Station, dist. 94 m.; stage line to post.
- * *Dutch Island, R. I., fort on.*—P. O. Jamestown, R. I.; tel. stn. Newport, R. I.; steam ferry from Newport to Jamestown, dist. 4 m., and private boat thence to post, dist. 1 m.
- Eagle Pass, Camp* (subpost of Fort Clark, Tex.) (Dept. Tex.).—P. O., tel. and R. R. stn. Eagle Pass, Tex.
- Ethan Allen, Fort, Vt.* (Dept. East).—P. O., tel. and R. R. stn. Burlington, Vt.
- * *Finns Point, N. J., battery at.*—P. O., R. R. and tel. stn. Salem, N. J., dist. 6 m.
- * *Foot, Fort, Md.*—P. O. New Glatz, Md.; tel. stn. Alexandria, Va.; steamer from Washington, D. C., dist. 9 m.

- **Gaines, Fort, Ala.*—P. O., tel. and R. R. stn. Mobile, Ala.; boat from Mobile, dist. 30 m.
- **Gorges, Fort, Me.*—P. O., R. R. and tel. stn. Portland, Me., dist. 1½ m.
- **Grant, Fort, Ariz.* (Dept. Colo.)—P. O. and tel. stn. same; daily stage (except Sunday) from Willcox, on S. P. R. R., dist. 27 m.
- **Griswold, Fort, Conn.*—P. O. and tel. stn. Groton, Conn.; R. R. stn. New London; ferry from New London, dist. 1 m.
- **Hamilton, Fort, N. Y.* (Dept. East.)—P. O. and tel. stn. same; city railroad from Brooklyn, dist. 6 m.
- **Hancock, Fort, Tex.* (Dept. Tex.)—P. O., tel. and R. R. stn. Fort Hancock Station (on G., H. and S. A. R. R., and Tex. Pac. R. R.), dist. 1½ m.
- **Harrison, Fort, Mont.* (Dept. Dak.)—P. O., tel. and R. R. stn. Helena, Mont.
- **Huachuca, Fort, Ariz.* (Dept. Colo.)—P. O. and tel. stn. same; daily buckboard from Huachuca Siding on N. Mex. and A. R. R., dist. 7 m.
- **Independence, Fort, Mass.*—P. O. and tel. stn. Boston, Mass.; Govt. tug from Boston, dist. 3 m.
- **Jackson Barracks, La.* (Dept. East.)—P. O. and R. R. stn. New Orleans, La., dist. 6 m.; street cars from New Orleans pass the post; tel. stn. Slaughter House, St. Bernard Parish, La.
- **Jackson, Fort, La.*—P. O. and R. R. stn. Buras, La., dist. 5 m.; tel. stn. Quarantine, La.
- **Jefferson Barracks, Mo.* (Dept. Mo.)—P. O., tel. and R. R. stn. same.
- **Jefferson, Fort, Fla.*—P. O. and tel. stn. Key West, Fla.; boat from Key West, dist. 71 m.
- **Johnston, Fort, N. C.*—P. O. and tel. stn. Southport, N. C.; steamer daily from Wilmington, N. C., dist. 26 m.
- **Keogh, Fort, Mont.* (Dept. Dak.)—P. O., tel. and R. R. stn. (N. P. R. R.) same.
- **Key West Barracks, Fla.* (Dept. East.)—P. O., tel. stn. and boat ldg. Key West, Fla.
- **Knox, Fort, Me.*—P. O. Prospect Ferry, Me.; tel. and R. R. stn. Bucksport, Me.; ferry from Bucksport, dist. ¼ m.
- **Lafayette, Fort, N. Y. H.*—P. O. and tel. stn. Fort Hamilton, N. Y.; city railroad from Brooklyn, dist. 6 m.
- **Leavenworth, Fort, Kans.* (Dept. Mo.)—P. O., tel. and R. R. stn. same.
- **Leavenworth Military Prison, Kans.*—P. O., tel. and R. R. stn. Fort Leavenworth, Kans.
- **Livingston, Fort, La.*—P. O. Grand Isle, La.; tel. stn. New Orleans, La.; steamer weekly from New Orleans, dist. 95 m.
- **Logan, Fort, Colo.* (10 miles south of Denver) (Dept. Colo.)—P. O., tel. and R. R. stn. (D. and R. G. and U. P. R. R.) same.
- **Mackinac, Fort, Mich.* (Dept. Mo.)—P. O. and tel. stn. Mackinac Island, Mich.; boat from Mackinaw City, dist. 11 m., and from St. Ignace, Mich., dist. 5 m.; steamboats from lake ports arrive hourly from June 1 to October 1. During winter by crossing ice, or by row or sail boat from St. Ignace, Mich.
- **Macon, Fort, N. C.*—P. O. Beaufort, N. C.; tel. and R. R. stn. Morehead City, N. C., dist. 2 m.
- **Madison Barracks, N. Y.* (Dept. East.)—P. O., tel. and R. R. stn. Sacketts Harbor, N. Y.
- **Marcy, Fort, N. Mex.* (Dept. Colo.)—P. O., tel. and R. R. stn. Santa Fe, N. Mex.
- **Marion, Fort, Fla.* (Dept. East.)—P. O., tel. and R. R. stn. St. Augustine, Fla.
- **Mason, Fort, Cal.* (Dept. Cal.)—P. O. Station A, San Francisco, Cal.; R. R. stn. San Francisco, Cal., dist. 3 m.; street cars ½ m. from post; tel. stn. at post.
- **McClary, Fort, Me.*—P. O., tel. and R. R. stn. Kittery Point, Me.
- **McHenry, Fort, Md.* (Dept. East.)—P. O., tel. and R. R. stn. Baltimore, Md.
- **McIntosh, Fort, Tex.* (Dept. Tex.)—P. O., tel. and R. R. stn. Laredo, Tex.
- **McKinney, Fort, Wyo.* (Dept. Platte.)—P. O. and tel. stn. same; daily stage from Clearmont, Wyo., on Burlington and Missouri River R. R., dist. 33 m.
- **McPherson, Fort, Ga.* (Dept. East.)—P. O., tel. and R. R. stn. Atlanta, Ga., dist. 4 m.
- **Meade, Fort, S. Dak.* (Dept. Dak.)—P. O. same; tel. and R. R. stn. (F. E. and M. V.) Sturgis City, dist. 3 m.
- **Merritt, Camp* (subpost of Fort Keogh, Mont.), (Dept. Dak.)—P. O. Lame Deer, Mont.; tel. and R. R. stn. (N. P. R. R.) Rosebud, Mont.
- **Mifflin, Fort, Pa.*—(P. O., Paschallville stn., Philadelphia, Pa.; R. R. and tel. stn. Philadelphia, Pa., dist. 5 m.
- **Missoula, Fort, Mont.* (Dept. Dak.)—P. O. same; tel. and R. R. stn. (N. P.) Missoula, Mont., dist. 4 m.
- **Monroe, Fort, Va.* (Dept. East.)—P. O. and tel. stn. same; steamers daily from Baltimore, Washington, Norfolk, and New York, and railroad (C. and O.) from Richmond, Va.
- **Montgomery, Fort, N. Y.*—P. O., tel. and R. R. stn. Rouses Point, N. Y. dist. 1½ m.

- * *Morgan, Fort, Ala.*—P. O. Herndon, Ala.; tel. stn. at post; steamer from Mobile, dist. 30 m.
- * *Moultrie, Fort, S. C.*—P. O. Moultrieville, S. C.; tel. and R. R. stn. Charleston, S. C., dist. 5 m.
- * *Mount Vernon Barracks, Ala.* (Dept. East).—P. O., tel. and R. R. stn. Mount Vernon, Ala.
- * *Myer, Fort, Va.* (Dept. East).—P. O. and R. R. stn. Washington, D. C.; telephone to post.
- * *Newport Barracks, Ky.* (Dept. East).—P. O., tel. and R. R. stn. Newport, Ky.
- * *Niagara, Fort, N. Y.* (Dept. East).—P. O. and tel. stn. Youngstown, N. Y.; R. R. stn. Lewiston, N. Y., dist. 7 m.
- * *Niobrara, Fort, Nebr.* (Dept. Platte).—P. O. and tel. stn. same; R. R. stn. (F. E. and M. V.) Valentine, Nebr., dist. 4½ m.
- * *Oglethorpe Fort, Ga.*—P. O., tel. and R. R. stn. Savannah, Ga., dist. 3 m.
- * *Omaha, Fort, Nebr.* (Dept. Platte).—P. O. and R. R. stn. (F. E. and M. V.) same; tel. (telephone to post) stn., Omaha, Nebr.
- * *Ontario, Fort, N. Y.* (Dept. East).—P. O., tel. and R. R. stn. Oswego, N. Y.
- * *Pembina, Fort, N. Dak.* (Dept. Dak.).—P. O., R. R. and tel. stn. Pembina, N. Dak. dist. 2 m.
- * *Phoenix, Fort, Mass.*—P. O., R. R. and tel. stn. Fairhaven, Mass.
- * *Pickens, Fort, Fla.*—P. O. Warrington, Fla.; tel. stn. Pensacola Navy-Yard; R. R. stn. at Fort Barrancas, Fla., dist. 1 m.
- * *Pilot Butte, Camp* (subpost of Fort D. A. Russell, Wyo.), (Dept. Platte).—P. O., tel. and R. R. stn. (U. P.) Rock Springs, Wyo.
- * *Plattsburg Barracks, N. Y.* (Dept. East).—P. O., tel. and R. R. stn. Plattsburg, N. Y.
- * *Popham, Fort, Me.*—P. O. Popham Beach, Me.; tel. and R. R. stn. Bath, Me., dist. 12 m. by water, 15 m. by land.
- * *Porter, Fort, N. Y.* (Dept. East).—P. O., tel. and R. R. stn. Buffalo, N. Y.
- * *Preble, Fort, Me.* (Dept. East).—P. O., tel. and R. R. stn. Portland, Me., dist. 1½ m.
- * *Presidio of San Francisco, Cal.* (Dept. Cal.).—P. O. and tel. stn. same; R. R. stn. San Francisco, Cal., dist. 4½ m.; city railway to post.
- * *Pulaski, Fort, Ga.*—P. O., R. R. and tel. stn. Savannah, Ga., dist. 14 m.
- * *Reno, Fort, Okla. T.* (Dept. Mo.).—P. O., tel. and R. R. stn. same.
- * *Riley, Fort, Kans.* (Dept. Mo.).—P. O., tel. and R. R. stn. same.
- * *Ringgold, Fort, Tex.* (Dept. Tex.).—P. O. Rio Grande City, Tex.; tel. stn. at post; stage from Pena, on T. M. R. R., dist. 72½ m., and from San Miguel, Mex., on Mex. N. R. R., dist. 23 m.
- * *Robinson, Fort, Nebr.* (Dept. Platte).—P. O., tel. and R. R. stn. (F. E. and M. V.) same.
- * *Sam Houston, Fort, Tex.* (Dept. Tex.).—P. O., tel. and R. R. stn. San Antonio, Tex.
- * *San Carlos* (subpost of Fort Grant), Ariz. (Dept. Colo.).—P. O. and tel. stn. same; daily stage (except Sunday) from Bowie, on S. P. R. R. (via Fort Thomas), dist. 102 m., and triweekly from Willcox, via Forts Grant to Thomas, thence by regular stage from Thomas to post, dist. 106 m.
- * *San Diego Barracks, Cal.* (Dept. Cal.).—P. O., tel. and R. R. stn. (C. S.) and boat ldg. San Diego, Cal.
- * *Scammel, Fort, Me.*—P. O., tel. and R. R. stn. Portland, Me., dist. 2 m.
- * *Schuyler, Fort, N. Y.* (Dept. East).—P. O., tel. and R. R. stn. West Chester, N. Y., dist. 3½ m.
- * *Sewall, Fort, Mass.*—P. O., tel. and R. R. stn. Marblehead, Mass., dist. 1½ m.
- * *Sheridan, Fort, Ill.* (Dept. Mo.).—P. O., R. R. and tel. stn. same.
- * *Sherman, Fort, Idaho* (Dept. Columbia).—P. O. Sherman, Idaho; tel. and R. R. stn. Cœur d'Alene, Idaho (on branch N. P. R. R.), dist. ¾ m.
- * *Ship Island, Miss., fort at.*—P. O., tel. and R. R. stn. (L. and N.) Biloxi, Miss., dist. 15 m.; special boat to post.
- * *Sill, Fort, Okla. T.* (Dept. Mo.).—P. O., and tel. stn. same; stage daily from Rush Springs, Ind. T., on C., R. I. and P. R. R., dist. 29 m.
- * *Snelling, Fort, Minn.* (Dept. Dak.).—P. O., tel. and R. R. stn. same; electric st. R. R. to St. Paul, Minn.
- * *Spokane, Fort, Wash.* (Dept. Columbia).—P. O. and tel. stn. Miles, Wash.; daily stage (except Sunday) from Davenport, on N. P. R. R., dist. 25 m.
- * *Stanton, Fort, N. Mex.* (Dept. Colo.).—P. O. and tel. stn. same; buckboard daily from San Antonio, N. Mex., on A., T. and S. F. R. R., dist. 130 m.
- * *Sterens, Fort, Oreg.*—P. O. and tel. stn. (Govt. tel. to post) Astoria, Oreg.; steamer daily from R. R. stn. Portland, Oreg., to Astoria, dist. 98 m.
- * *St. Francis Barracks, Fla.* (Dept. East).—P. O., tel. and R. R. stn. St. Augustine, Fla.
- * *St. Philip, Fort, La.*—P. O. Neptune, La.; tel. stn. Old Quarantine stn., La.; steamer daily from New Orleans, dist. 73 m.
- * *Sully, Fort, S. Dak.* (Dept. Dak.).—P. O. and tel. stn. same; R. R. stn. (C. and N. W.) Pierre, S. Dak., dist. 23 m.

- **Sumter, Fort, S. C.*—P. O. Moultrieville, S. C.; tel. and R. R. stn. Charleston, S. C., dist. 5 m.
- **Supply, Fort, Okla. T.* (Dept. Mo.)—P. O. and tel. stn. same; R. R. stn. Woodward, Okla. T., on A., T. and S. F. R. R., dist. 15 m.; daily stage to post.
- **Taylor, Fort, Fla.*—P. O., tel. stn. and boat ldg. Key West, Fla.
- Thomas, Fort, Ky.* (Dept. East).—P. O., tel. and R. R. stn. Newport, Ky., dist. 3 m.
- Townsend, Fort, Wash.* (Dept. Columbia).—P. O. and tel. stn. Port Townsend, Wash., dist. 3 m.
- Trumbull, Fort, Conn.* (Dept. East).—P. O., tel. and R. R. stn. New London, Conn., dist. 1 m.
- Vancouver Barracks, Wash.* (Dept. Columbia).—P. O. and boat ldg. Vancouver, Wash.; tel. stn. at post; R. R. stn. at Portland, Oreg.; boat from Portland, Oreg., daily, dist. 18 m., and by ferry and city railroad, dist. 6 m.
- Wadsworth Fort, N. Y.* (Dept. East).—P. O. Rosebank, Staten Island, N. Y.; tel. stn. Quarantine, Clifton, Staten Island, N. Y.
- Walla Walla, Fort, Wash.* (Dept. Columbia).—P. O., tel. and R. R. stn. (O. R. and N. Co., and W. and C. R. R. R.) Walla Walla, Wash., dist. 1 m.
- Warren, Fort, Mass.* (Dept. East).—P. O. and tel. stn. Boston, Mass.; steamer from Boston, dist. 7 m.
- Washakie, Fort, Wyo.* (Dept. Platte).—P. O. and tel. stn. same; daily stage from Rawlins, Wyo., on U. P. R. R., dist. 147 m.
- Washington Barracks, D. C.* (Dept. East).—P. O., tel. and R. R. stn. Washington, D. C.
- **Washington, Fort, Md.*—P. O. same; tel. stn. Alexandria, Va.; stmbt. from Washington, D. C., dist. 13 m.
- Wayne Fort, Mich.* (Depot. Mo.).—P. O. and tel. stn. Detroit, Mich.; city railway from Detroit, dist. 4 m.
- West Point, N. Y.* (U. S. Mil. Acad.).—P. O. tel. and R. R. stn. same.
- Whipple Barracks, Ariz.* (Dept. Colo.).—P. O. and tel. stn. Whipple; R. R. stn. (P. and A. C.) Prescott, Ariz.
- Willets Point, N. Y.* (U. S. Engineer School).—P. O. and tel. stn. same; R. R. stn. Whitestone, N. Y., dist. 2½ m. (See Engineer Depot.)
- **Winfield Scott, Fort, Cal.* (Dept. Cal.).—P. O. and tel. stn. Presidio of San Francisco, Cal.; R. R. stn. San Francisco, Cal.
- Wingate, Fort, N. Mex.* (Dept. Colo.).—P. O. and tel. stn. same; R. R. stn. (A. and P.) Wingate, dist. 3 m.
- **Winthrop, Fort, Mass.*—P. O. and tel. stn. Boston, Mass.; steamboat from Boston, dist. 2 m.
- Wood, Fort* (subpost of Fort Columbus), N. Y. (Dept. East).—P. O., tel. and R. R. stn. New York City.
- Yates, Fort, N. Dak.* (Dept. Dak.).—P. O. and tel. stn. same; R. R. stn. Bismarck, on N. P. R. R., dist. 60 m.
- Yellowstone, Fort, Wyo.* (Dept. Dak.).—P. O. Mammoth Hot Springs, Wyo.; tel. stn. June 1 to October 1, Mammoth Hot Springs; October 1 to May 31, Cinnabar, Mont.; R. R. stn. Cinnabar, Mont., via Livingston, on N. P. R. R., dist. 8 m.

ARMORIES, ARSENALS, AND DEPOTS.

ARMORIES, ARSENALS, AND ORDNANCE DEPOTS.

- Allegheny Arsenal, Pa.*—P. O., tel. and R. R. stn. Pittsburg, Pa.; Lt. Col. F. H. Parker, comdg.
- Augusta Arsenal, Ga.*—P. O., tel. and R. R. stn. Augusta, Ga., dist. 3 m.; electric R. R. from Augusta to Arsenal; Maj. J. G. Butler, comdg.
- Benicia Arsenal, Cal.*—P. O., tel., R. R. stn. and boat landing Benicia, Cal., dist. 1 m.; Lieut. Col. L. S. Babbitt, comdg.
- Columbia Arsenal, Tenn.*—P. O., tel. and R. R. stn. Columbia, Tenn.; Maj. J. E. Greer, comdg.
- Fort Monroe Arsenal, Va.*—P. O. and tel. stn. Fort Monroe, Va.; stmbts. daily from New York, Baltimore, Washington, and Norfolk, and railroad (C. and O.) from Richmond, Va.; Lieut. Col. W. A. Marye, comdg.
- Frankford Arsenal, Pa.*—P. O. (Station F) and tel. stn. (telephone to post) Philadelphia, Pa.; Lieut. Col. J. P. Farley, comdg.
- Indianapolis Arsenal, Ind.*—P. O., tel. and R. R. stn. Indianapolis, Ind.; Maj. A. L. Varney, comdg.
- Kennebec Arsenal, Me.*—P. O., tel. and R. R. stn. Augusta, Me.; Maj. J. R. McGinness, comdg.
- New York Arsenal, N. Y.*—P. O. and tel. stn. Governors Island, New York City; Govt. steamer to post; Maj. F. H. Phipps, comdg.

Rock Island Arsenal, Ill.—P. O. and tel. stn. Rock Island, Ill.; special conveyance from R. R. stns. and boat ldgs. in Rock Island, Ill., and Davenport, Iowa, dist. 2 m.; Col. A. R. Buffington, comdg.
St. Louis Powder Depot, Mo.—P. O., tel. and R. R. stn. Jefferson Barracks, Mo.; Maj. J. A. Kress, comdg.
Sandy Hook Proving Ground, N. J.—P. O. box 1449, New York City; tel. stn. Sandy Hook, N. J.; Govt. steamer daily from New York City, dist. 20 m.; Capt. Frank Heath, comdg.
San Antonio Arsenal, Tex.—P. O., tel. and R. R. stn. San Antonio, Tex.; Maj. C. E. Dutton, comdg.
Springfield Armory, Mass.—P. O., tel. and R. R. stn. Springfield, Mass.; Col. A. Mordecai, comdg.
U. S. Powder Depot, N. J.—P. O., tel. (telephone to post) and R. R. stn. Dover, N. J., dist. 4½ m.; Col. J. M. Whittemore, comdg.
Watertown Arsenal, Mass.—P. O., tel. and R. R. stn. Watertown, Mass.; Maj. J. W. Reilly, comdg.
Waterrliet Arsenal, N. Y.—P. O. and tel. stn. (telephone to post) West Troy, N. Y.; R. R. stn. Troy, N. Y., dist. 1 m.; electric street cars to Albany, N. Y.; Maj. Isaac Arnold, jr., comdg.

RECRUITING RENDEZVOUS.

Columbus Barracks, Ohio.—P. O. and R. R. stn. Columbus, Ohio.; tel. stn. at post.
Davids Island, N. Y.—P. O. same; tel. stn. New Rochelle, N. Y.; horse-car and boat from New Rochelle, dist. 3 m.
Jefferson Barracks, Mo.—P. O., tel. and R. R. stn. same.
Fort Sheridan, Ill.—P. O., tel. and R. R. stn. same.

ENGINEER DEPOT.

Willels Point, N. Y.—P. O. and tel. stn. same; R. R. stn. Whitestone, Queens County, N. Y., dist. 2½ m.; Lt. Col. W. R. King, comdg.

HEADQUARTERS OF REGIMENTS.

CAVALRY.

- | | |
|----------------------------|-------------------------|
| 1. Fort Grant, Ariz. | 6. Fort Myer, Va. |
| 2. Fort Wingate, N. Mex. | 7. Fort Riley, Kans. |
| 3. Jefferson Barracks, Mo. | 8. Fort Meade, S. Dak. |
| 4. Fort Walla Walla, Wash. | 9. Fort Robinson, Nebr. |
| 5. Fort Sam Houston, Tex. | 10. Fort Custer, Mont. |

ARTILLERY.

- | | |
|-------------------------------|------------------------------------|
| 1. Fort Hamilton, N. Y. | 4. Washington Barracks, D. C. |
| 2. Fort Adams, R. I. | 5. Presidio of San Francisco, Cal. |
| 3. St. Francis Barracks, Fla. | |

INFANTRY.

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|-----------------------------|--------------------------------|
| 1. Angel Island, Cal. | 14. Vancouver Barracks, Wash. |
| 2. Fort Omaha, Nebr. | 15. Fort Sheridan, Ill. |
| 3. Fort Snelling, Minn. | 16. Fort Douglas, Utah. |
| 4. Fort Sherman, Idaho. | 17. Columbus Barracks, Ohio. |
| 5. Fort McPherson, Ga. | 18. Fort Bliss, Tex. |
| 6. Fort Thomas, Ky. | 19. Fort Wayne, Mich. |
| 7. Fort Logan, Colo. | 20. Fort Leavenworth, Kans. |
| 8. Fort D. A. Russell, Wyo. | 21. Plattsburg Barracks, N. Y. |
| 9. Madison Barracks, N. Y. | 22. Fort Keogh, Mont. |
| 10. Fort Reno, Okla. T. | 23. Fort Clark, Tex. |
| 11. Whipple Barracks, Ariz. | 24. Fort Bayard, N. Mex. |
| 12. Fort Niobrara, Nebr. | 25. Fort Missoula, Mont. |
| 13. Fort Niagara, N. Y. | |

ADJUTANT-GENERAL'S OFFICE,
 Washington, D. C., October 1, 1894.

D.—Statement showing gain and loss in the enlisted strength of the Army during the fiscal year ended June 30, 1894.

GAIN.	
Enlisted.....	6,068
Reenlisted.....	2,079
From desertion.....	660
Total.....	8,807
LOSS.	
Expiration of service.....	2,701
For disability.....	482
By purchase.....	600
For fraudulent enlistment.....	253
By favor.....	159
As veterans.....	85
For minority.....	6
Under General Orders, No. 80, of 1890.....	1,278
By sentence of general courts-martial.....	1,089
For other causes.....	354
By promotion.....	6
Died of wounds.....	1
Died of disease, etc.....	179
Retired.....	114
Deserted.....	1,073
Total.....	8,380
Enlisted strength June 30, 1893.....	25,361
Gain.....	8,807
	34,168
Loss.....	8,380
Enlisted strength June 30, 1894.....	25,788
NOTE.—There were in the Army (included in the strength) on June 30, 1894—	
Hospital Corps.....	777
Signal Corps.....	50
General service clerks and messengers.....	164
Total.....	991
Indians belonging to the line of the Army.....	547
Indians scouts.....	130

REPORT OF THE INSPECTOR-GENERAL.

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Mileage	99
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WAR DEPARTMENT,
INSPECTOR-GENERAL'S OFFICE,
Washington, D. C., September 20, 1894.

SIR: I have the honor to submit the following report of matters pertaining to this department for the fiscal year ending June 30, 1894:

MILITARY POSTS.

During the year 91 posts, garrisoned by 375 companies, and 11 ungarrisoned posts in charge of ordnance sergeants, have been inspected. There were 1,135 officers and 21,119 enlisted men present at these

inspections and 598 officers and 1,370 enlisted men absent. Of the absent officers 126 were on leave, 375 on detached service, and 97 absent for causes not stated. Of the absent enlisted men 610 were on furlough, 61 without leave, 419 on detached service, and 280 absent for a number of causes not stated. The large number of absent officers possibly affects to some extent the efficiency of the organizations to which they belong, and has prevented, in some cases, the annual routine practice marches. The general condition of all garrisoned posts is reported good. The condition of the ungarrisoned posts remains as reported last year, and many important points on our seacoast are practically defenseless. In this connection your attention is specially invited to the condition and present use of Fort Jefferson as a quarantine station. Nineteen years have elapsed since this important fortification was abandoned to its fate and it has passed from one stage of abuse and neglect to another, until to-day it serves no better purpose than a national pesthouse. That this disposition of a valuable military and naval base is to be regretted can hardly be questioned, and no time should be lost in removing every obstacle to its proper occupation, whether a garrison be ordered to it or not.

Fort Bidwell, Camp Poplar River, and Fort Sidney have been abandoned.

It is a long time since a more complete inspection of posts and garrisons has been made within a fiscal year; that it has been done now, is another indication of the industry and zeal of the officers, whether permanent or temporary, who have performed these duties with a full consciousness of their importance and with such efficiency as may well make the past year a model. The inspectors have, themselves, well established reputations as post commanders. Never before, perhaps, were drill and discipline better, nor administration more efficient and satisfactory, nor the comforts and contentment of military life greater throughout every grade. Recent events have served to show the skill and expedition with which bodies of troops of all arms can be moved, their perfect reliability from wherever taken, the facility with which they can be handled, the satisfactory quality both of the individuals and the organizations, the sagacity and readiness of their officers, and their own admirable conduct in crises approaching a national emergency. The close and painstaking scrutiny, by the general inspectors, of all that concerns the service has given them the gratifying assurance that the army in its appointments and lines of activity is in admirable condition; and from year to year it has seemed no more than justice to publicly affirm a state of affairs due to its own thorough, intelligent, and conscientious work. Our fellow-citizens may appreciate the worth of the army better to-day than it did a year ago or than it may a year hence, when some may smile again at its usefulness as a thing of the past; but to the patriotic soldier its most marked weakness to-day appears to be that there is too little of it. Can we expect more?

During the past fiscal year there was no change in the personnel of the permanent officers of the corps.

The work of each inspecting officer may possibly be succinctly indicated by a summary like this, and the statement presented in more detail in the appendix.

Officers.	Department or station.	Disbursements.		Posts.	Staff posts, depots, prisons, and un-garrisoned posts.
		Num-ber.	Amount in-volved.		
Col. R. P. Hughes.....	East.....	155	\$15, 030, 081. 43	19	20
Capt. H. J. Nowlan	do	76	3, 408, 349. 23	7	1
Col. E. M. Heyl.....	Missouri	74	7, 090, 873. 12	6	7
Capt. J. M. Lee	do	61	5, 816, 854. 79	3	6
Lieut. Col. G. H. Burton...	Washington, D. C	63	10, 687, 606. 69	1	4
Lieut. Col. H. W. Lawton..	Los Angeles, Cal	8	1, 370, 137. 09	.....	1
Maj. J. P. Sanger.....	Washington, D. C	35	3, 838, 661. 99	.....	1
Maj. P. D. Vroom.....	Texas	93	5, 860, 796. 91	9	3
Lieut. Col. J. F. Kent	Dakota.....	42	3, 732, 899. 75	12	2
Lieut. Col. Evan Miles.....	California	87	2, 709, 761. 92	6	2
Lieut. Col. J. M. Bacon.....	Columbia	71	2, 454, 025. 57	7	1
Maj. J. M. Hamilton.....	Platte	105	3, 367, 415. 18	7	2
Maj. A. R. Chaffee	Colorado	55	2, 999, 902. 84	13	.....
Total.....	.....	928	¹ 68, 367, 366. 51	90	50

Officers.	Colleges.	National cemeteries.	Recruiting stations.	Special investiga-tions.	Total number of in-spections.	Miles traveled.	Number of persons inspected.	Cost of property inspected.	Average con-demned per soldier.
Col. R. P. Hughes.....	13	1	.....	6	310	10, 206	5, 890	\$26, 652. 31	\$6. 77
Capt. H. J. Nowlan	8	2	9	.....		8, 842	2, 335	13, 896. 46	11. 19
Col. E. M. Heyl.....	7	2	2	3	206	14, 557	4, 039	61, 780. 18	21 05
Capt. J. M. Lee.....	13	0	6	4		18, 775	1, 869	17, 625. 51	39. 52
Lieut. Col. G. H. Burton ..	8	4	2	1	164	² 11, 686	783	9, 783. 96	.....
Lieut. Col. H. W. Lawton..	.....	.....	2	5		¹ 9, 623	.....	36, 621. 38	.....
Maj. J. P. Sanger	9	18	2	.....	125	7, 940	851	8, 431. 46	.....
Maj. P. D. Vroom.....	7	12	1	.....		10, 024	2, 768	69, 527. 14	37. 44
Lieut. Col. J. F. Kent	3	1	2	.....	62	9, 301	3, 572	66, 981. 79	20. 00
Lieut. Col. Evan Miles.....	3	.....	.....	4	102	² 3, 855	1, 794	12, 946. 04	9. 62
Lieut. Col. J. M. Bacon.....	1	.....	1	4	85	4, 194	1, 413	21, 998. 71	16. 21
Maj. J. M. Hamilton.....	4	1	.....	.....	119	6, 515	2, 780	40, 847. 98	15. 99
Maj. A. R. Chaffee.....	4	1	.....	1	74	8, 042	3, 599	89, 309. 02	26. 22
Total.....	82	51	27	28	1, 256	123, 560	31, 693	476, 391. 94	21. 18

¹ This includes transfers and repeated inspections of the same funds.
² Including changing station.

In a few instances the character of the recruits
Enlisted Men. received at posts has been reported unsatisfactory.

The discontinuance of the recruiting depots and the change in the term of service may be expected to remove many causes of complaint and discontent. The term of enlistment having been reduced to three years, section 2 of the act of Congress providing for the furlough and discharge of certain soldiers ceases to have effect, and the fluctuations and possibly the restlessness which that act is said to have provoked among the enlisted men will be followed by greater contentment. I venture to suggest that there is no further necessity for retaining the pay of soldiers as directed in the act approved June 16, 1890, and that the repeal of that act would result in benefit to the army.

The discipline of the army has been reported gen-
Discipline. erally as very good. Taking, for example, the Depart-ments of Texas and Missouri as fairly representative, 78 per cent of the enlisted men of the first named and 84 per cent of

the last named are reported as never having been in confinement. That a misunderstanding of the orders and decisions of the War Department in certain cases has led to some relaxation of discipline with injurious effect may be possible, but in general the tone of the men is good and they have given unquestioned obedience to authority. The recent labor troubles, and especially the riots in Chicago, have been full of incidents illustrating the courage, intelligence, and discipline of the army, calling forth many expressions of praise and gracious appreciation from the press and from all law-abiding people. It is a pleasure to note that the conduct of the Fifteenth Infantry, which was actively engaged throughout these trying scenes, is said by the inspector to have been excellent. Such a report is as gratifying as it is well merited.

The general regulations of the army, paragraphs 218 and 219, contemplate annual orders from army and department headquarters prescribing the practical and theoretical instruction to be given during the year. An examination of the files discloses the fact that these orders were issued from the headquarters of but two departments. As a result, the instruction of the troops has not been uniform, except in routine garrison duties, and in some departments has gone but little beyond such duties. The great need of the army is not theoretical instruction nor routine duties, but the frequent and thorough application of principles, gathered from all sources, in the solution of tactical and other military problems. To be sure, this has been done at some posts during the past year, and at Forts Riley and Leavenworth the instruction has been ample, and the experience of the strike has been instructive and has demonstrated how every opportunity had been improved to the utmost, but in a majority of cases it has been confined to short practice marches and guard duty, and even this instruction has been totally neglected by a number of the garrisons much beyond their immediate limits. The mobilization of masses is essential to the highest military instruction.

It must be confessed that many obstacles are in the way of proper instruction even in infantry drill, resulting from a defective organization, the restricted area of many military reservations, and the lack of the frequent aggregation of a considerable force; but if these difficulties can not be wholly removed, then let them be obviated as far as practicable. By requiring every post commander to report at the commencement of the season just what kind of practical instruction he proposes to give, beyond the drill, and by testing the result at the annual inspection, a way would no doubt be opened to a better state of facts and feeling than now exists in regard to this subject. In this connection it affords me pleasure to report that the acting inspector-general of the Department of Colorado, Major Chaffee, assisted by Lieut. C. B. Baker, A. D. C., in compliance with a suggestion sent from this office in April last, has prepared a problem in minor tactics for each post in the department; these, if permissible, will be tested at the forthcoming inspection. And others have been practically and profitably illustrated elsewhere, and the tendency of military instruction both at the service schools and posts has been more and more strongly in this direction. Such exercises are no longer novelties, their principles and necessity are well understood and are becoming more universally and fairly appreciated.

The lyceums continue a prominent feature of theoretical instruction, and, when well conducted, give good results. But it has been suggested that the essays prepared would be more improving were the subjects selected of a simpler character and confined more to current

events and live topics and to what the writers know from experience. Too much time need not be spent in compilations on "strategy," "the command of armies," and like subjects; these can be left to the Jominis and Von Moltkes, unless we are willing to deny that they require years rather than months of study and the highest genius for their application. Attention has been drawn to the fact that the establishment of the lyceum has practically ended the instruction of officers prescribed in paragraph 217, army regulations, and that this has not added to their efficiency.

The practical and theoretical instruction of the artillery has progressed along the lines established in general orders from the headquarters of the army, but not to the extent contemplated. The danger lies in an excess of theory and too much reliance on auxiliaries which, in the smoke and excitement of battle, may prove worthless allies. Therefore, while teaching scientific gunnery we should not forget that at the most critical moment the gunner may be thrown upon his own resources.

Attention has been directed to the lack of sufficient drill in the estimation of distances, in vessel tracking, and in firing at moving objects. The latter, it would seem, is one of the most important branches of target practice, notwithstanding the assertion that the battle ship of the future will be compelled to anchor in order to deliver an effective fire, which seems rather a prophecy than a practically established fact.

As an auxiliary in estimating distances the pocket range finder has proved useful, and should be issued to all batteries of artillery, mounted and foot.

In closing this subject it is suggested that in order to perfect the instruction of the foot batteries occupying our permanent forts, they should be required to simulate, annually, the conditions of a battle both by day and night, for which every preparation should be made to the minutest detail. This might well be done during the season of target practice.

Signaling. This branch of instruction has received very careful attention at some posts and not so much at others.

Where conscientiously given the results have been all that could be desired. The remark has occasionally been made that the instruction is of no practical use. No greater mistake could be made, as the Chicago riots have fully demonstrated. Referring to this subject Captain Lee, acting inspector-general Department of Missouri, whose intelligent, arduous, and soldierly labors in connection with the movement of troops and other matters during the strike deserve more than a passing mention, reports that "on Friday, July 13, four signal stations were established by Capt. James Allen, chief signal officer, insuring communication between troops in case of severance of telegraph and telephone lines. The non-commissioned officers of the Signal Corps are experts, but it is very evident that the Corps should have a full proportion of expert privates as well, say 75 to 100, and not expect to get men from companies for quick and critical work like this." From this it may be inferred that Captain Allen had some difficulty in finding among the troops sufficiently instructed signal men promptly at hand and accustomed to working together; which is not to be wondered at and may happen again if our officers fail to see the practical use of rapid communication, under any and all circumstances. It is suggested in this connection that were instruction in signaling limited to those men of a company who manifest aptitude for the drill rather than extended to all, irrespective of their intelligence or skill,

the requirements of the service and of paragraph 1761, army regulations, would be more fully attained than they now are.

Hospital Corps and
Stretcher Bearers.

The instruction given this important branch of the service has continued throughout the year, and in some instances with results approaching perfection. How exceedingly gratifying this great improvement is may be inferred from a comparison with the reports of a few years ago. The company of the hospital corps at Fort Riley has had under instruction 100 men, 53 of whom have been transferred for duty to other stations. At date of inspection the company was partially armed with carbines, revolvers, and knives, and, as reported, was devoting three-quarters of an hour daily to carbine drill.

Admitting without question the very great necessity to an army of a hospital corps, it is not easy to understand why its members should be instructed in the military use of any such weapon, or in what way such instruction prepares a recruit for the duties of dressing injuries or nursing the sick. On the other hand, there is a manifest impropriety in giving arms of any description to a soldier of the Red Cross, whose duties do not demand it and whose neutrality in time of war renders it wholly unnecessary.

Another view of this subject is presented by the facts. If it be found necessary to the proficiency of the medical department that its members be trained as combatants, then a return to the old system, under which those who now compose the hospital corps were recruited, would probably subserve the best interests of that department. Only soldiers who had proved their aptitude and efficiency for the duties were transferred as a rule, and having been already instructed in the use of arms, there was no encroachment on their time or that of medical officers for that purpose, and no temptation to turn from the legitimate duties of the medical department to those which are wisely intrusted to other hands.

Post Schools.

Inexperienced teachers, unwilling pupils, and irregularity in attendance, with occasional deficiencies in schoolrooms and supplies, appear to be the main obstacles to improvement. Now, that the enlistment of persons unable to read, write, and speak the English language has been forbidden by special enactment, much of the opposition of the enlisted men to school attendance, as well as the necessity for such attendance, will no doubt disappear, and the schools may be expected to improve. In this connection I beg to renew my recommendation of previous years, that first and second class certificates, according to proficiency, be granted to soldiers who complete the branches of a common-school education, and that a small increase be made in the pay of those who receive certificates of the first class. This would no doubt be an incentive to the men, and bring about a much needed uniformity in the post-school system.

Indian Soldiers.

These remain about as reported last year, and I venture to renew the suggestion that the companies be concentrated and formed into battalions or regiments. Should this experiment fail the employment of Indian soldiers, except as scouts, or under very favorable circumstances, may be considered a failure.

Messing.

Post and company messes still continue, with a large percentage of the officers in favor of the company system, though it is generally admitted that the general mess insures less waste and greater uniformity throughout a command, and the

messing is far better now than when the company mess prevailed alone; still this is apt to be attributed to other causes. Under former difficulties it was no slight task upon the first sergeant or captain to feed the company, and sometimes there was failure or only partial success in it; and at others the more military duties were allowed to yield somewhat to this pressing necessity, for the reputation of the company seemed sometimes affected by, though not dependent upon, its food. The post mess was not started as an amusement, but for a purpose which seemed to be needed then, though it may have been partially or wholly solved otherwise since. The best disciplined, best drilled, and best fighting organizations were not necessarily the worst or the best fed. During the recent labor troubles it was said that companies from posts having had post messes for some time did not always have a sufficiency of field outfit for messing, the non-commissioned officers were unfamiliar with the proper management of the rations, and there was a lack of company funds. If the post mess system is to be generally established, it is indispensable that every company have a fair amount of field service annually, to insure the adequate and serviceable condition of the mess outfit, and to give the entire personnel of the company some experience in caring for and cooking the rations in the manner necessary in active campaigning.

The post magazines have generally been found in good order and the ordnance sergeants trustworthy, but not in all cases as familiar with their duties as desirable, as the recent explosion at Fort Pulaski and the storage of loaded shells and fixed ammunition in some of the magazines would indicate. The magazines at some posts are dangerously near other buildings and should be moved.

No complaints have been received as to the character of ordnance stores, except in the case of the unfortunate accident at Chicago.

New hospitals are reported necessary at Forts Barancas, Hamilton, Wadsworth, and McHenry, Washington Barracks and Angel Island; repairs are necessary on twenty others. All are reported as in good or excellent police, and the medical stores and supplies of good quality. The necessary steps are being taken to supply the needs at some or all of the posts.

The water supply of five posts is reported as insufficient, and at four posts the quality is bad. The conditions, generally, as reported a year ago continue to exist, with a tendency toward improvement as funds become available.

The fire apparatus supplied the posts has been found generally in serviceable condition, but the variation in the number of fire drills and in the necessary precautions continue, and a general system of instruction is very much needed.

The bathing facilities of many posts have been reported inadequate, although the existing deficiencies are not as great as a year ago. A sufficient number of bath tubs and water-closets should be considered indispensable to every permanent post in the country. Other comforts may be dispensed with if necessity requires it, but not the appliances upon which good health so much depends.

The drainage and sewerage systems of the posts remain very much as reported last year. In the construction of new posts the subject has received its full share of attention, but more should be done for such of the old posts as are not to be abandoned in the near future. It is again sug-

gested that all of the large posts be provided with crematories for the disposal of refuse.

Target Practice. The troops are generally reported as having completed the prescribed course of instruction except in estimating distances and in firing at moving targets.

I beg to renew the recommendation that whenever practicable "the skirmish firing of the infantry and cavalry and all the practice of the field artillery at unknown distances be made during annual practice marches and at objects representing the objects of a battlefield."

Police and Sanitation. With but one exception the police of all the posts has been pronounced from good to excellent. The sanitary state of three posts is considered bad, due to causes beyond the control of the garrisons.

THE SUPPLY DEPARTMENTS.

The supplies of all departments have been generally of excellent quality and sufficient in quantity.

Quartermaster's Department. A few complaints have been made of the campaign shoes, which have been reported of inferior quality and workmanship; of the infantry dress coats, which lose color on the shoulders and skirts from the pressure of the rifle and bayonet; of the musical instruments provided by one of the firms. The recommendation is again made that, owing to the annoying delays occasionally attending the supply of necessary tableware, post quartermasters be directed to keep on hand a sufficient quantity to meet emergencies. Men in garrison are reported as using their tins for months while waiting for renewal of the crockery. A cover for pillows similar to the mattress cover has been recommended. Owing to the prevalence of high winds and the consequent waste, it has been suggested that only baled hay be issued to Forts Reno, Sill, and Riley.

Owing to a lack of funds the necessary alterations, repairs, and painting of the public buildings have not been made in all cases. Additional barracks and quarters are needed at Forts Riley and Wayne. Steam laundries should be provided at all considerable posts and the clothing of our soldiers washed at the lowest rates. Nothing conduces more to good morals, good health, good discipline, and the general contentment of soldiers in garrison than personal cleanliness and neatness of dress. These virtues are generally as highly rated in most companies as they should be, and the lack of the necessary bathing facilities and the prices charged for laundry work are severely felt wherever exceptionally great.

As leggings are not only a part of the authorized uniform, but are worn by foot troops on all occasions of field duty, and not infrequently by mounted troops, it has been recommended that trousers adapted to their use be issued in lieu of those ordinarily worn to such commands as prefer them. Wrapping and tying the trousers about the ankle and placing the leggings over them is a clumsy arrangement at best, and comparatively heating and uncomfortable during continued and trying marches. By substituting breeches coming well below the knee, or by making the trousers so that they will fit close to the leg and button just above the ankle, for campaigning the legging could be worn as intended and the comfort of the soldier increased. The change in the term of enlistment from five to three years will render necessary a change in the annual clothing allowance. When this change is made it is recommended that the allowance of gauntlets of mounted troops, especially for batteries of artillery, be increased to two pairs each year.

Subsistence Department During the year there have been no serious complaints of the quality of subsistence stores, and the manner of conducting the sales appears to have been fairly in accord with the regulations. The subject of army rations for the field has received unusual attention abroad and many experiments have been made with foods to determine their nutrition and the effect of heat and cold in preserving them. It is recommended that soup tablets be added to the travel ration. They are nutritious, palatable, and most conveniently carried. Complaint has been made of lack of soap. The question of the proper preparation of the ration, both in field and garrison, is growing in interest since its adequacy has been attained; and the weight and disposal of the soldier's kit and campaign articles is attracting closer attention. The attention of the national guard is being drawn to such subjects; and it is evident how much the mobility and efficiency of an army depends upon their proper solution. A military force without mobility is robbed of some of its finest qualities.

Remount Depots. In this connection I venture to renew my suggestion of previous years that steps be taken to provide better horses for the mounted service. The system under which horses are supplied has received a fair trial and has been more than once questioned if not condemned. While the standard of the men forming the cavalry and light artillery of the army has been very much raised, comparatively nothing has been done to improve the quality and selection of the horses. Various suggestions have been made, but the only practical system, it is believed, is to establish remount depots, whether regimentally, like the recruiting system, or otherwise. The horses should be well bred and might be two or three years of age when sent to depot, where they should be as carefully instructed as our recruits are, and might well conform to the adopted color. It is not every team or troop that prefers to appear piebald, and soldiers are benefited by uniformity. Apart from the danger to life and limb and the injuries to which our cavalry soldiers are annually exposed by being forced to handle vicious and untrained animals, sometimes not even halter broken, there is no economy in the purchases of either such horses or those stiffened by draft work and unfitted for the charge or for crossing rough country and overcoming obstacles under the saddle at the risk of the rider's neck. There is probably not a regiment of cavalry in the army to-day which has not at sometime had one or more horses eating their heads off and rendering no adequate return to the government. The inspection reports of unserviceable horses thus far received show that during the year 588 cavalry horses have been condemned for various other causes. The hard times and modification of prevailing fashions and habits, electricity and traction for street cars, and other substitutions of mechanism for horse power, have combined to make the prices of good acceptable horses noticeably lower, and it seems a specially good time for a successful effort to supply the mounted service with exactly suitable animals at reasonable cost. Where the best horses are to be found in this country is well known, and also where knowledge as to their training has received the highest results, especially for work under the saddle. The post for cavalry in New England will soon be occupied, and one in the South is recommended.

ORGANIZATION AND DRILL REGULATIONS.

While these two subjects have been very prominently before the army during the past year, they do not appear to have been brought into accord. All bills introduced into Congress for the amelioration of the artillery and infantry expired or remain in committee, and the drill

regulations remain practically as they were. To the cavalry this is not probably a serious matter, as, excepting the two skeleton troops of each regiment, the organization is complete, and the drill regulations of this arm have been generally approved by cavalry officers. Some slight modifications appear to be necessary, and these will, no doubt, be made at an early day. Whether it would not be wise to revive the twelve troops of each regiment, substituting white men for Indians wherever they exist, is a question which, in view of its serious import, may well be considered, and minimizing the recruiting depots and sending the mounted recruits to the cavalry post at Fort Riley, as suggested in the law, may render this more feasible.

The organization of the infantry and their drill regulations are by no means in harmony. In anticipation, no doubt, of early and favorable action by Congress on the organization, the present drill regulations were compiled. They are based on the theory of three battalions and large companies. They have now had nearly two years of trial, and for some purposes, even of war, are believed by some to be ill adapted to the present organization, if not to the characteristics, of our soldiers. On one point, however, there may be fair unanimity. Either the organization should be changed to suit the drill regulations, or *vice versa*. One or the other should be paramount, and everything made to conform to it.

As for the artillery, every recent effort to benefit it by legislative enactment has failed. Its wants are too well known to need repeating. The "hump" spoken of in the navy with dread, deserves now, as it has for years, equal consideration for the artillery. Only the devotion and admirable quality of its officers save it from decadence or complete ruin. All things that it can do for itself and the country it has done admirably. Let us indulge the hope that to the satisfaction which comes from the conscientious performance of duty may be added those other rewards which are indispensable to the *esprit de corps* and discipline of every army. Its day to receive the fairest attention must surely dawn.

THE MILITARY PRISON.

The annual inspection of the Military Prison was made June 18 by Col. E. M. Heyl, inspector-general. There were 8 officers, 120 enlisted men, 20 civilian employees, and 523 prisoners present. The fiscal affairs of the prison, its public property, and its general management have been strictly in accordance with the laws and regulations. A high state of discipline is maintained by Captain Pope, the superintendent. The efficiency of the prison has not been affected apparently by the reduction by law in the number of inspections formerly required, as recommended in the communication of June 24, 1890, from this office. The large percentage of recaptures is commendable and another indication of the general efficiency, energy, and strict discipline which prevails at this institution. If deserters were retaken with equal certainty that crime, which seems to have greatly diminished this year, would be fairly minimized.

THE SPECIAL SERVICE SCHOOLS.

This school was inspected by Col. R. P. Hughes, inspector-general, in April, simultaneously with the inspection of the post, and both inspections were covered by one report.

The Artillery
School.

Attention is invited to the recommendation of the inspector that additional quarters be provided for the accommodation of the student officers who, since the occupation of Carroll Hall as a barracks, have been obliged to reoccupy the casemates. He suggests, as a means of obviating this difficulty, the temporary transfer and use of the ordnance yard. One captain and sixteen lieutenants were reported absent on detached service, which seems to reduce the commissioned strength below the manifest needs of the school.

This school was inspected by Col. E. M. Heyl, inspector-general, in the month of June. It is the opinion of the commandant of the school and the inspector that for needful purposes of instructions a battery of field artillery should be added to the garrison. Now that the practical instruction in minor tactics may be said to have been thoroughly established, and problems are solved requiring the employment of the three arms, the presence of a field battery would no doubt prove very beneficial.

The inspector further recommends that one of the quartermaster storehouses be fitted up for the use of the school, and a double brick building erected on the site of the former building destroyed by fire last winter; that Thomas and McPherson Halls be replaced by double brick buildings for additional quarters; that the annual appropriation for the school be increased to \$5,000 in place of \$1,500; that the number of student officers be increased and a class graduated annually; that horses be supplied for the practical fieldwork of the officers; that two assistant instructors and a permanent clerk be added to the school, as well as a much larger printing press.

This school was inspected in March by Col. E. M. Heyl, inspector-general. The principal needs of the school are a larger annual appropriation, not less than \$3,000; a discontinuance of details for detached service, which have caused serious interruptions to the course of instruction; hot-water pipes for the riding hall; a careful topographical survey of the reservation; sufficient fencing weapons, plastrons, etc.; forty additional horses for the instruction of the batteries in the duties of horse artillery; a large increase in the allowance of ammunition for artillery target practice; three additional sets of officers' quarters for the artillery subpost.

All these schools were carefully inspected. It might be well if the instruction at our several institutions could be so coordinated that student officers could beneficially attend more than one without wasting time duplicating studies. Those military studies and exercises which are generally considered necessary in all armies as a preparation for general staff work should be carefully developed and required at one of them, and the practical exercises with the three arms united should be possible.

MILEAGE.

Attention is again invited to the subject of mileage as presented in my last annual report. The experience of another year has pressed the necessity of the relief suggested in the matter of payment of advance mileage, or some method by which an officer will not be obliged to advance from his own or his friends' private resources the means to carry on the public service. For many years prior to the decision of the comptroller of March 11, 1886, advance mileage was paid to officers without loss to the government. Can not this practice be again restored

by proper legislation, or a partial relief be given by regulation? Legislation seems to have imposed every proper restriction that can be desired and reduced the amount of the appropriations considerably. Within the limits now clearly defined it is doubtless well to show the same consideration to those who are compelled to travel under authorized orders upon public duty as is shown to trusted citizens by the firms which employ them, especially if this consideration costs nothing; and it is submitted that sleeping cars and transfers are but simple justice under easily expressed limitations, and there seems no need of perpetuating any injustice and make obeying proper orders an unnecessary hardship which has driven more than one deserving officer into debt. The question is understood to be under consideration whether the refundment of such an advance is liable to the income tax.

INSPECTION OF UNSERVICEABLE PROPERTY.

Under the recent regulations prescribed by the Secretary of War and having your approval, all inspections of unserviceable property, with a view to its sale or destruction, are to be made by inspectors-general, acting inspectors-general, or by officers specially designated in each case, who shall not be in any way connected with the staff department, corps, or particular organization to which the property pertains. These regulations secure expert as well as disinterested judgment, and are entirely in accordance with the law; and any careful comparison with former years will indicate how much more regularly this extensive business is now being conducted, and what a considerable economy this carefulness is affecting now than formerly prevailed.

During the year ending June 30, 1894, there were received 2,392 inventory and inspection reports, covering all kinds and classes of public property for which army officers are responsible. Of this number 2,012, or 84 per cent of the entire number, were acted on by the officers of this department, and 16 per cent by officers specially detailed for that duty. This averages eight or ten each working day. As a corollary to this duty, and aiding its perfect performance, it is the habit at some department headquarters to have the reports of the boards of survey referred to the local inspector-general's office. It would be well if this practice was followed at all. But it can hardly be expected to become universal at once, and it may find some opposition, as it can only improve inspections which may seem a subsidiary matter.

The difficulty referred to in my last report of obtaining the cost, invoice, or current price of articles presented for inspection has been overcome to some extent and the request of some inspectors for information concerning the proceeds resulting from the sales they recommend has been under consideration; but the lists are not yet completed. Last year on 83 per cent of the reports the cost prices were reported as against 70 per cent for the year before. With a little more assistance from the responsible officers and supply departments this information can be so presented that any extravagance can be located sufficiently approximately for practical purposes or remedial action. If there is any opposition to giving the responsible inspector the information he deems useful as a guide to his judgment and in the public interests, may not such opposition be overcome?

A summary of the inventory and inspection reports for the fiscal year shows that 2,150,779 articles, including units of measure and weight, were inspected, and of this number the cost of 1,680,775 was given and amounts to \$590,320.29, or about 35.1 cents per article.

Applying this rule to the 470,004 articles of which the cost was not stated, the cost of these articles would be \$164,971.40, and the total cost of all the articles presented for inspection would be \$755,291.69, which seems sufficient to deserve all the careful supervision being extended to it; and evidently this, like all habitual inspections, must be applied fairly alike to all to obtain the best results.

Of the whole number of articles inspected 1,968,023 were condemned, representing, on the basis of the cost price of 1,514,249 articles at 33½ cents, \$662,474.75, and 182,756 articles, or about one-twelfth of the entire number, were retained in service. The articles retained (extending the calculation to all, on the basis of the 166,526 articles of which the cost prices were given) cost, at 0.4721 cents each, an aggregate of \$88,278.30, or about 12 per cent retained for further service. This summary does not include any public property pertaining to the river and harbor improvements, for which officers of the Engineer Corps are responsible; but only such as have the certificates of two officers upon their personal examination prior to the final disposition of such permanent property as has been entered upon the returns.

The whole number of public animals presented for the action of the inspector was 997 as against 1,339 presented the previous year. Of this number 588 belonged to the cavalry, 82 to the artillery, and 327 to the transportation service of the Quartermaster's Department, and about 10 per cent of the whole number was retained in service. The estimated value of the 898 condemned was \$125,445.89, an average of \$139.69 per animal, and the value of the 99 retained about \$13,535.58. It may be noted that the figures in this simplest branch of inspection duty exceed the pay of the entire Corps; and though a careful scrutiny of details like this may be tedious, it has been found both economical and beneficial in every branch of inspections, and gives the only precise insight yet obtained concerning this subject.

It may be easily understood that some opposition to inspections may exist occasionally here and there, even to simple and explicitly authorized inspections of property for condemnation under the act of March 3, 1825, and any antagonism to the free exercise of their legitimate functions by our regularly commissioned inspectors, or the fullest information reaching them habitually and promptly concerning the matters it is their function to inspect, of course, militates against the proper performance and efficacy of a duty that deserves to be recognized as important, if not absolutely essential; and damage is more apt to be done when this opposition is not open and direct, but occult. Whether inspectors shall inspect, and how and what and when they shall inspect, would seem to be the simplest questions, definitely decided long ago, and only needing to be fairly and fearlessly conducted and sustained everywhere in the manner so well established and well known to everybody; and the organization of the Inspector-General's Department is simply to insure this fair, complete, and thorough general inspection of the entire military establishment—frequently for money matters and in no haphazard way or perfunctory spirit about any regular or special matter. And it is sincerely hoped that the entire military establishment has this year been almost as completely inspected as ever before, and will continue to be inspected as desired by superior authority, whom it is our earnest effort and desire to satisfy.

Respectfully submitted.

J. C. BRECKINRIDGE,
Inspector-General.

The MAJOR-GENERAL COMMANDING THE ARMY.

REPORT OF MAJ. GEN. O. O. HOWARD.

HEADQUARTERS DEPARTMENT OF THE EAST,
Governors Island, New York, August 31, 1894.

SIR: I have the honor to submit my annual report.

By the last return, of date July 31, 1894, there are 26 garrisoned posts and 38 posts not garrisoned.

In this command we have 4 troops of cavalry, 41 foot batteries of artillery, 3 light batteries of artillery, and 38 companies of infantry (including 7 skeleton companies), in all present and absent, including the medical corps and all detachments, an aggregate of 413 commissioned officers and 4,935 enlisted men. Of these 257 officers and 4,280 enlisted men are present for duty with their commands. There are 9 officers from my command detailed as instructors at schools and colleges within the geographical limits of the department.

Ungarrisoned posts are, as a general rule, in charge of an ordnance sergeant. The commanding officer, Fort Hamilton, is responsible for Fort Lafayette, and the commanding officer, St. Francis Barracks, for Fort Marion, these forts being without troops.

Further particulars in regard to the posts and troops will be found in the roster appended hereto.

This year the ordinary course of instruction has been somewhat interrupted, directly and indirectly, by the troubles centering in Chicago. The insurrection extended to some degree into Indiana, but the governor of that State was so prompt in his action that it obviated the necessity of my sending any force in that direction. One regiment from this department, the Ninth Infantry, under instructions from Washington, went to the vicinity of Chicago and assisted the troops gathered there for thirteen days, when it was relieved from that duty and returned to its stations at Madison Barracks and Fort Ontario, N. Y. The officers and men of this regiment receive commendation for the promptitude of their movement and their uniform good conduct en route and during their tour of irksome duty in Chicago. Other troops were held in readiness to move to Illinois or elsewhere on short notice had the insurrection so enlarged as to require it. At one time, judging by the daily reports, I feared that there would be obstructions to commerce, to transportation of supplies, and hindrances of the mails at several points, for example, at Toledo, Cleveland, Columbus, and Cincinnati, Ohio; Buffalo, Albany, and the vicinity of New York City, and at some more southern stations, like Birmingham, Ala., and New Orleans, La. My apprehensions were, however, not realized; but should such difficulties arise again, and simultaneously in cities far apart, the necessity for regular troops and more of them than this department now affords is apparent. Just now the National Guard in several States in the department is well organized and responds promptly to every call of duty; still, if more than one State is involved in any event growing out of anarchy, the Executive will always require his own troops. They will be essential to his execution of the laws and maintenance of order. Of course governors of States could cooperate, but they might disagree, or be reluctant in meeting sudden emergency. I strongly recommend an increase of the Army to at least double the size of our present force.

It will, in my judgment, be like an adequate police, the best possible method of preserving the peace until many vexatious questions which are now troubling our country are put at rest by a solution satisfactory to the people of the nation.

The engineer and ordnance work along the Atlantic coast is not directly under my charge, and what progress has been made will doubtless be reported through the Chiefs of Engineers and Ordnance. I feel, however, that already our coast defenses are in fairly good condition, and that in conjunction with our ever increasing naval armament there would be little fear from outside aggression.

TROOPS.

ARTILLERY.

The inspector of artillery shows in his report some progress in obtaining new guns. Already we have an 8-inch breech-loading rifle and 12-inch breech-loading mortar added to the armament of Fort Monroe. This "is the first step in the direction of supplying our forts with the new armament, and it is hoped that the good work thus begun may be continued." In addition to these breech-loading guns the following have been added to the armament of the posts: Two 15-inch guns, Fort Barrancas; three 8-inch rifles and one 15-inch gun, Key West Barracks, Fla., and one 10-inch S. C. mortar, Fort Warren, Mass. The inspector of artillery renews his recommendation of last year, "that each artillery post be supplied with two 3.2-inch B. L. field guns, or 5-inch siege guns, for instruction purposes, and practice where it is practicable to have it." In this I strongly concur. Nothing is more essential than that artillerymen should be thoroughly instructed in the use of their new arms.

Great diligence has been shown in artillery practice with such guns as the artillerymen have had, and reports from the different artillery regiments have been full and satisfactory. It will add greatly to the efficiency of the artillery of the Army when the breech-loading guns now under construction, or soon to be constructed, shall have been sent to the different forts and garrisons where they can be used. There seems to be a growing interest in artillery exercises. Target practice is certainly essential to any reasonable skill in the handling and firing of heavy guns.

The inspector-general of the department has some very pointed suggestions which he makes for increasing the skill and efficiency of the artillerymen. Some of these I desire to emphasize; he says: "There certainly should be much more attention devoted to the training of batteries in those exercises most nearly simulating the incidents natural to that service when in actual contact with a worthy antagonist. They (the gunners) are not habitually taught to measure distance and time. Our (field) batteries go on practice marches and the horses are thus taught draft, and the men are taught the routine of camp life, but they are not instructed efficiently in appreciating the values to be given to gait, time, and distance;" and he urges more instruction along these particular lines. He also recommends that practice in firing at moving targets be held with field guns. This might be done with great advantage, and I concur in the recommendation. Applications have been made for authority to hold practice at moving targets at certain posts, and the requests have been approved. Such practice should be in excess of that at known distances, and should not interfere with the system of classification at present in use, which gives good results.

INFANTRY.

The drill and instruction of the infantry serving in the department is satisfactory with the exception of extended order. In this respect it is reported as not proficient. The inspector does not think it can be made proficient "until either the means is given us to pay for possible damages to private property, that would authorize garrisons to drill across country not owned by the Government, or until the troops can be assembled for such drill at some place where the reservation is large enough to enable the drill in extended order to be had." Our reservations are too small for this drill, and do not afford opportunities for the exercises as they should be conducted. There is need of the reorganization of the infantry, which should, as recommended so many times, be given the three battalions, and thus conform to the artillery and cavalry. This is necessary, particularly in an army like ours, which may need to be expanded at any time. There are bills now before Congress which, if passed, would measurably perfect this organization.

The skeletonized companies should, in my judgment, be again filled. There is need for more troops, and any increase in our force should include the reorganization of these companies.

CAVALRY.

The four troops of cavalry serving in the department have been thoroughly drilled, and are in a very high state of efficiency.

INDIANS.

There have been in the department for part of the year two companies of Indians—I of the Ninth Infantry, and I of the Twelfth Infantry; the former has been disbanded by discharge and the members sent back to Arizona, where they were enlisted. Company I, Twelfth Infantry, still remains. It was recruited in great part from the Apache prisoners of war. It is presumed that this company will be disbanded when the War Department acts under the law making an appropriation for moving the prisoners of war now at Mount Vernon Barracks. There are at Mount Vernon Barracks 305 Indian prisoners of war. Most of these prisoners are women and children. Progress has been made during the year in teaching cleanliness and proper modes of living. The children have attended the schools maintained for them and have made satisfactory progress. I strongly recommend, in view of the Indian soldiers going out of the service, that these prisoners be turned over to the Interior Department to be taken care of and civilized.

DISCIPLINE AND COURTS-MARTIAL.

The discipline of the command is fair. The number of trials by general court-martial have increased 49 over the last year; the number of trials before garrison and summary courts have decreased 5; the number of cases tried has therefore exceeded last year's record by 44. A large proportion of the cases tried by general courts have been for violations of Articles of War which cover minor offenses. When the charges are accompanied by records of previous trials and convictions, these trials almost invariably result in the discharge from the service of the offender, and, as the inspector of the department says: "The number of men discharged by general court-martial indicates that incorrigible subjects are no longer tolerated in the ranks." In view of the fact that, as reported by the inspector, the number so discharged about

equals the number lost to the service by purchase, and taking into consideration the great expense attending the convening of general courts-martial and the bringing of this class of offenders to justice, I am of the opinion that it would be in the interest of economy and in no way interfere with justice if such cases could be tried before garrison courts and the culprits discharged upon sentence, after approval by the department commander. An examination of the records shows that a large proportion of the offenses against discipline arise from intemperance.

RECRUITING.

The discontinuance of the large recruiting depots at Davids Island, New York, and Columbus, Ohio, and the plan of sending the recruits to their companies more rapidly than has been done in the past will result in promoting the efficiency of the men. There seems to be no difficulty in obtaining all the men we need, and of a good class. If to the inducements now held out to men to serve with the colors we should add a classification of the men, as suggested by the department inspector, so that upon reaching a standard of proficiency they would receive a reward, I believe there would be an incentive to distinct effort, and a steady improvement in discipline and intelligence. Attention is invited to the remarks of the department inspector on this subject.

POST SCHOOLS AND LIBRARIES.

The Fort Monroe School, where an officer is in direct charge, gives excellent results. But generally the post school, as at present conducted, is not a success. As the officers are compelled to study and recite, the same rule might with advantage be extended to the men. The designating of particular men for instruction seems to be offensive to them. Any plan that would place the schools under the direct personal charge of officers, who would be held strictly responsible for the methods of instruction, would, it is believed, improve the schools.

There are few books in the post libraries, which are, as a rule, in poor condition. There is no way at present of replenishing the libraries. A portion of the proceeds from the post exchange might with advantage be devoted to this purpose.

POST EXCHANGES.

The post exchanges seem to be conducted in accordance with orders and regulations. I believe the increase of cases of courts-martial is largely due to these exchanges. I form this opinion from the cases that have come before me, and believe the drinking habit is increased by the encouragement given them. As I, myself, am regarded as extreme, the words of the department inspector are at least certainly suggestive:

From the amount of beer consumed in them (the exchanges) it is to be feared that we shall have many rheumatic and gouty soldiers in the course of time, provided the restriction on length of service is taken off. As matters stand in this inspection, the general practice seems to be to turn the net profits of the exchanges into the messes of the men. This is a bad education for men whose profession is supposed to be one of self-sacrifice and denial. On previous occasions I have advocated turning over a part—say 40 per cent—of the profits to the post treasurer to be expended in maintaining a post library for the men. It is granted that the men's stomachs must receive careful attention within certain limits, but I think that limit has been passed, and that that member is now being favored at the expense of his head.

The allowing of the men to purchase from the exchange on credit is also open to criticism.

POST LYCEUMS.

From an examination of the abstract of the work accomplished in the post lyceums, hereto annexed, this year's course of lectures has evidently been broad and comprehensive. Some of the post commanders are not in favor of the scope allowed in the selection of subjects. Many are not in favor of requiring field officers to lecture, as this places them on a par with junior officers and opens the way to criticism, which, they allege, is not in the interest of discipline. I believe it would be better to have only voluntary lectures from field officers, and to have the subjects assigned by the regimental commanders. Some means should be found of increasing the supply of standard military works at posts to enable officers to prepare these lectures.

POSTS.

For a list of buildings erected or contracted for at the different posts, I refer to the report of the chief quartermaster of the department, hereto appended.

An appropriation should be made to complete the post of Madison Barracks, N. Y., according to the new plan. A new guardhouse is much needed there. At Fort Monroe, Va., a modern hospital and a new gymnasium are needed. The sewerage system at this post is still bad, and the water supply insufficient. The commanding officer suggests an artesian well as a remedy for the latter. At Washington Barracks, D. C., the guardhouse is inadequate, and the stench from a neighboring factory is complained of. The question as to the removal of this factory is already before the District Commissioners. At Fort McHenry, Md., a part of the cemetery has been washed away. It is recommended that the bodies be removed to a national cemetery. At Fort Thomas, Ky., an appropriation for the purchase of shade trees is recommended. The question of an electric plant for lighting the post is again brought up by the commanding officer, who states that it will be in the interest of economy. It is surely better for lighting. More quarters for officers are reported as needed at that post. At Fort Columbus, Governors Island, New York, there is urgent need of a suitable set of quarters for the post commander. This officer now occupies quarters belonging to the department staff. He should have his own quarters, and not be liable to disturbance with each change. A gymnasium and amusement room is urgently needed, and I repeat my recommendation of last year, that one be built.

NATIONAL GUARD.

The troops of this command have maintained their pleasant relations with the National Guard during the year. The reports published regarding the marches and encampments of the combined forces are most favorable and flattering to the officers and men of our Army.

During the year First Lieut. Adam Slaker, First Artillery, was selected by his post commander to deliver a series of lectures on the new infantry drill regulations before the members of the National Guard of New Jersey. This selection was made at the solicitation of the adjutant of the Fourth New Jersey Regiment. The skill and care shown in the preparation of these lectures and the high praise Lieuten-

ant Slaker received would seem to point out a field in which the acquirements and experience of our officers might with advantage be made useful.

By special invitation I was present at a review and drill by one brigade of the National Guard of New Jersey, in presence of its division commander. All arms of the service were participants. A company of the Seventh New Jersey National Guard gave an excellent exhibition in the presence of all the troops of a variety of exercises in extended order. The entire performance at Sea Girt, N. J., gave great credit to the diligence and proficiency of the officers and men of the National Guard. So much progress with so little time allotted is remarkable.

It would be of great advantage to have the National Guardsmen near forts, have more instruction in the seacoast defenses wherever possible. This can be done with little or no expense to the Government.

STAFF DEPARTMENTS.

QUARTERMASTER'S DEPARTMENT.

The work of this branch of the service has been economically and efficiently conducted throughout the department.

SUBSISTENCE DEPARTMENT.

There has been such general satisfaction, both to officers and men, in all that has come from this department that little need be said. The watchful care of the officers on duty and the instructions given to enable the cooks and bakers to properly prepare the food for the men according to the latest methods have resulted in improvement. The modernizing of the bake ovens is in the same direction.

MEDICAL AND HOSPITAL CORPS.

The medical director gives full statistics as to the health of the command in his report hereto appended. He speaks in high terms of the efficiency of the Hospital Corps, but suggests increased instruction in certain classes of duties, as follows:

At the few posts visited by me during the year this drill has been thorough. The instruction, however (the most important part of which is on other subjects than drill), to members of the Hospital Corps and litter bearers, has not been in all cases such as is desirable, and in one instance proved to have been much neglected.

I invite attention to his remarks about the water supply of Fort Adams, R. I., Governors Island, New York, Fort Hamilton, N. Y., and Forts Monroe and Myer, Va. The necessity for speedily perfecting the water supply can not be too much emphasized.

The supply of ice for the Southern posts, especially enough for the preservation of meats and perishable articles of food, ought to be abundantly provided for.

PAY DEPARTMENT.

The work of the pay department has been entirely satisfactory during the year.

SIGNAL SERVICE.

Instruction seems to have been given systematically in this branch, and the Acting Chief Signal Officer reports that at a majority of the posts there are officers and men who can send and receive at least fifteen words per minute.

CONCLUSION.

With one or two exceptions, I have visited the several posts within the limits of the department, and in every instance had a favorable impression of the efficiency and good conduct of both officers and enlisted men. Post commanders have uniformly exhibited diligence and completeness in the performance of their duties.

There have been but few changes in the staff at headquarters.

In a few days Col. and Bvt. Brig. Gen. Charles H. Tompkins, assistant quartermaster-general, will go upon the retired list. His long and faithful service, which has extended through the war of the rebellion and many Indian campaigns, is already on record. His unremitting diligence and well-matured advice during the last six years in which we have served together is gratefully recalled.

Again, as last year, I record my unqualified approbation of each officer of the general and personal staff.

Before the time for another report I shall close the period of my active service. My connection with the Army from 1850, when I became a cadet, till the present time, when I have reached the age of compulsory retirement, affords me pleasure in the retrospect. No service, however, has been more agreeable to me, personally, than that of the last six years in connection with this department. And the satisfaction arises in the main from the uniform loyalty, energy, and efficiency shown by the personnel of my command, by those immediately around me, and not less by those at remoter posts and garrisons. As I wrote in closing my report last year, so I urge again upon all the motive of efficiency and attainment rather than the hope of high rank, which, in our small Army, is seldom achieved.

Very respectfully, your obedient servant,

OLIVER O. HOWARD,

Major-General, Commanding Department of the East.

The ADJUTANT-GENERAL UNITED STATES ARMY,

Washington, D. C.

REPORT OF MAJ. GEN. NELSON A. MILES.**HEADQUARTERS DEPARTMENT OF THE MISSOURI.**

Chicago, Ill., September 4, 1894.

SIR: I have the honor to submit the following report of affairs in my department since my last, dated August 25, 1893:

There have been no changes of troops in the department during the year.

As in previous years, the troops in the Indian and Oklahoma Territories have been occupied during much of their time in removing trespassers from the public lands, in preserving order in the newly-settled region, and in keeping the peace between hostile factions of the semi civilized Indian tribes. In addition to removing and expelling intruders in the Choctaw Nation, and from the Osage and Kaw Indian reservations, the troops stationed at Forts Reno, Sill, and Supply were called on for the purpose of protecting the United States mails, guarding railroad bridges, and supporting the United States marshal in making arrests. All of these difficult duties have been performed in a manner which shows good judgment and discretion on the part of the officers, and a

good state of discipline and faithful service on the part of the troops, and it is believed that but for their prompt intervention much bloodshed would have resulted. The troops having quickly and efficiently accomplished the arduous duties assigned to them, have been withdrawn from the field and returned to their respective stations.

The following troops were concentrated in Chicago, Ill., by the orders of the President of the United States, to execute the orders and processes of the United States court to prevent the obstruction of the United States mails, and generally to enforce the faithful execution of the laws of the United States.

From Fort Brady, Mich., Companies B and F Nineteenth Infantry, left that post July 5, and arrived in Chicago the following day.

From Fort Leavenworth, Kans., Companies A, Fifth; H, Seventh; F, Tenth; E, Twelfth; and F, Thirteenth Infantry, left that post July 5, and arrived in Chicago the following day.

From Fort Riley, Kans., Maj. L. T. Morris with Troops C, E, F, and G, Third Cavalry; Maj. W. F. Randolph with Light Batteries A and F, Second, and F, Fourth Artillery; Lieutenant Maxfield with detachment of signal corps, and Assistant Surgeon Quinton with detachment of hospital corps. These troops left Fort Riley on July 8, and arrived in Chicago on the 10th.

From Fort Sheridan, Ill., the Fifteenth Infantry, Troops B and K, Seventh Cavalry, and Light Battery E, First Artillery, with Surgeon Girard and detachment of hospital corps. This command arrived in Chicago at 11 p. m., July 3, 1894.

From Madison Barracks, N. Y., the Ninth Infantry, which arrived in Chicago July 9, 1894.

From Fort Niobrara, Nebr., Col. D. S. Gordon, with Troops A, E, G, and H, Sixth Cavalry, arrived in Chicago July 10, 1894.

The conduct of the troops in restoring order and confidence where mob violence and a reign of terror existed in and near the city of Chicago was marked by great forbearance, fortitude, and excellent discipline, and their presence and action here very greatly contributed to the maintenance of civil law, and, in my opinion, saved this country from a serious rebellion when one had been publicly declared to exist by one most responsible for its existence.

The troops remained in the city fifteen days, and having accomplished the object for which they were brought together, and carried out to the full extent the orders of the President and the Major-General Commanding the Army, they were, with the exception of the Ninth Infantry, which returned to the Department of the East, withdrawn to Fort Sheridan, and during the month of August moved to camps Abraham Lincoln and Orrington Lunt, Evanston, and during that time engaged in field maneuvers, which were both interesting and highly beneficial to the service.

In the maneuvers simulating the action of troops in battle embracing the three arms of the service, as well as the Signal and Medical corps, all exhibited marked efficiency and good knowledge of their profession; their deportment and skill were highly creditable to the service, and entirely satisfactory to the department commander.

The troops have all been returned to their proper stations except Troops C, E, F, and G, Third, and Troops A, E, G, and H, Sixth Cavalry, which have taken station, for the present, at Fort Sheridan.

The inspection reports show that good administration is preserved at the different posts in the department, and that the garrisons are efficient and well disciplined.

Accompanying this report are the reports¹ of the staff officers at these headquarters; also a tabulated statement¹ of the work done by post lyceums in the department, established in compliance with General Orders, No. 80, series of 1891, Adjutant-General's Office.

Very respectfully, your obedient servant,

NELSON A. MILES,
Major-General, Commanding.

The ADJUTANT-GENERAL UNITED STATES ARMY,
Washington, D. C.

REPORT OF BRIG. GEN. THOMAS H. RUGER.

HEADQUARTERS DEPARTMENT OF CALIFORNIA,
San Francisco, Cal., August 25, 1894.

SIR: I have the honor to submit the following report of operations by the troops, of occurrences and of the condition of affairs in the Department of California since the annual report of August 25, 1893.

Pursuant to the requirements of General Orders, No. 69, Headquarters of the Army, August 22, 1893, the post of Fort Bidwell was abandoned on October 21 last, and the garrison—Troop C, Fourth Cavalry—was transferred to the Presidio of San Francisco for station, arriving on October 30.

Light Batteries D and F, Fifth Artillery, left the Presidio of San Francisco on September 5 last on a practice march and for the annual practice firing, and rejoined at the Presidio on October 4 last, having marched 291 miles. The instruction had by the batteries in firing was conducted in accordance with a scheme submitted by the inspector of artillery, Maj. John I. Rodgers, First Artillery, and with decidedly beneficial results. A special report of this practice has been heretofore submitted.

Pursuant to instructions of the Major-General Commanding the Army, dated March 22 last, Troop C, Fourth Cavalry—Capt. George H. G. Gale, commanding—left on May 17 a camp of instruction of the squadron of the Fourth Cavalry before established near Gilroy, Cal., for the Yosemite National Park, for the purpose of protecting the same from trespass under instructions received from the Interior Department, and arrived at the park on May 25; and Troop B, Fourth Cavalry, left the camp of instruction on June 6, last, for the performance of similar duty in the Sequoia and General Grant National parks, and arrived there on the 15th of that month. These troops have since continued in effective performance of the duties specified.

In accordance with instructions of March 30 last from the Headquarters of the Army, Batteries B and M, Fifth Artillery, left on June 8 last the Presidio of San Francisco and Fort Mason, respectively, for Fort Canby, Department of the Columbia, and Batteries A and C, Fifth Artillery, arrived at the Presidio of San Francisco and at Alcatraz Island, respectively, from Fort Canby, on June 15.

Battery I, Fifth Artillery, was transferred for station from Alcatraz Island to Fort Mason, on June 8 last.

The squadron of the Fourth Cavalry at the Presidio of San Francisco, consisting of Troops B, C, I, and K, left that post on April 6 last, under

¹Omitted.

command of Lieut. Col. Samuel B. M. Young, Fourth Cavalry, for a course of instruction in field exercises, and established a camp near Gilroy, Cal., distant 95 miles from the post. Troop C was detached from the command on May 17 and Troop B on June 6, for service in the Yosemite and Sequoia National parks. The remaining troops rejoined at the Presidio of San Francisco on July 8 last. The instruction given at the camp and on the march was comprehensive in character and thorough in practical application.

The service of most importance performed during the year by the troops serving in the department, was that recently rendered under orders received requiring prevention of obstruction to the United States mails, interference with interstate commerce, and the enforcement of the mandates and warrants of the United States courts.

On the evening of July 1 last, orders were received conveying the direction of the President that a sufficient force be sent at once to Los Angeles, Cal., with instructions to enforce the mandates and warrants of the United States courts and prevent obstruction of the United States mails.

Col. William R. Shafter, First Infantry, was accordingly, on July 2, directed to proceed with five companies, B, C, D, F, and H, of his regiment at Angel Island, and one, G, from Benicia Barracks, to Los Angeles, Cal., and carry out the instructions received. The command arrived at Los Angeles on July 4.

The general condition of affairs at Los Angeles relative to the duty required of the command was as follows:

Total suspension in the transportation of the United States mails, on all lines of railway passing through or departing from Los Angeles, had occurred in consequence of the so-called railroad strike. The intimidation exerted by the strikers over those disposed to work, and the disregard shown to the mandates of the United States courts, rendered resumption of the operation of the railways at that point for the transmission of the mails and for purposes of interstate commerce practically impossible, except by the interposition of a military force.

The result of the presence of the troops was, that the mail-train service was soon resumed on all main lines—first to the East and later on that to San Francisco. The trains were guarded by detachments of troops from the 7th until the 15th of July, when they were discontinued. With the exception of the overturning by strikers, on July 10, of some cars on a railroad crossing to interrupt the running of trains, no overt act was committed during this time, but there is sufficient evidence for belief that the strikers would have resorted, in the absence of a military force, to any degree of violence thought necessary to prevent the operation of the railroads centering at that point, except upon terms dictated by themselves. In this connection attention is invited to the reports of Colonel Shafter, attached hereto and marked Exhibits 1¹ and 2.¹

The general condition in southern California having apparently become as usual, the command was withdrawn on the 16th instant.

On July 7 instructions were received conveying the order of the President, directing that the military force under my command be employed to remove obstructions to the mails and prevent interruption to interstate commerce over the Central Pacific Railroad, and to give such protection as to insure to the Government the use of such railroad for postal, military, or other governmental purposes. By telegram of

¹ Omitted.

the same date from the Headquarters of the Army, I was informed that instructions of identical import had been given to Brigadier-General Brooke, commanding the Department of the Platte, the object being to maintain uninterrupted communication over the Union and Central Pacific roads from Omaha to San Francisco, and also I was advised to consult with the governor of California, or his military representative, respecting such cooperation as might be practicable between the troops under my command and the State forces.

The condition of affairs at this time relative to the operation of the Central Pacific Railroad was substantially as follows: The railroad company had been virtually displaced in possession of the railroad throughout its length from Ogden to Sacramento, and of the lines in extension to San Francisco, by the so-called strikers—members of the association known as the American Railway Union—and a like condition obtained as to all railroads under the control of the Southern Pacific Railway Company and centering at Sacramento and Oakland. I determined to first begin action at Sacramento in execution of the instructions received, as that was the point where the strikers were in greatest force and had assumed the most belligerent attitude. Also it is the western terminus proper of the Central Pacific Railroad, to which road my instructions in part especially applied, and the point of its junction with the general Southern Pacific system. It was presumable also, as was proven to be the fact, that suppression of lawlessness at that principal point would have a marked effect for the restoration of order elsewhere and especially at Oakland, the point next in importance relative to disturbance in the operation of the railroads conveying the United States mails.

There were in the employ of the railroad company at Sacramento on June 29 last, when the strike had become operative, nearly 2,500 men in the shops—as trainmen, firemen, switchmen, foremen, yardmen, watchmen, and trackmen. Of these over 2,100 joined the strikers either willingly or from intimidation, the greater part—over 1,700—being employees at the shops. In addition to these, some 500 active strikers joined from places on the lines of the railroads converging there, making the total number of those at Sacramento at the date of the receipt of instructions actively engaged as strikers so-called, about 3,000. The greater part of these had arms, guns or pistols. From the best information obtainable, several hundred, not less than 300, were armed with rifles or guns of some kind. A large party, many armed with rifles, came from Dunsuir and other places on the line of the railway to Portland, by means of a train of which possession was taken by them. Armed parties came also from Stockton and Lathrop, Cal., and from the line of the Central Pacific to the eastward.

On July 4 a force of the State troops of California, composed of two regiments and part of another, were assembled at Sacramento upon request made for assistance by the United States marshal under the provisions of a statute of the State for the purpose of affording such assistance as might be necessary to resumption of the operation of the railroad for the carriage of the mails and for the purposes of interstate commerce. For reasons and owing to facts which it is not within the purpose of this report to state, the object was not accomplished. Owing to the comparatively small force at my disposal—the First Infantry being at the time at Los Angeles and still required there—I suggested by telegraph on July 8 that the available force of marines at the Mare Island Navy-Yard be placed subject to my orders. By the

order of the President, a battalion of three companies of marines was made available.

On July 10, I directed Col. William M. Graham, Fifth Artillery, commanding the Presidio of San Francisco, to proceed with the four foot batteries at the post, A, H, K, and L, Fifth Artillery, the squadron of cavalry, Troops I and K, Fourth Cavalry, Lieut. Col. Samuel B. M. Young, Fourth Cavalry, commanding; Battery E, Fifth Artillery, from Alcatraz Island; Company E, First Infantry, from Benicia Barracks, and the Battalion of the Marine Corps, Maj. Percival C. Pope, commanding (the latter two organizations having been directed to join en route), to Sacramento for execution of the order of the President, the first object to be attainment of control at Sacramento and afterwards the opening of the Central Pacific Railroad to the eastward to meet a force that would come from Ogden westward on the railroad on like duty. Lieut. Col. Francis L. Guenther, Fifth Artillery, commanding at Alcatraz Island, was directed to report to Colonel Graham for duty with the command, and Maj. Benjamin F. Pope for duty as chief medical officer.

The command, which consisted of 26 officers and 516 men, arrived at Sacramento by boat on the morning of July 11, and without serious trouble took possession of the railroad station, yards, shops, etc., clearing them of what strikers were present, without necessity for firing or action other than advancing companies with bayonets at the charge and the cavalry troops with sabers drawn.

In this connection attention is requested to the report of Col. William M. Graham, Fifth Artillery, and the accompanying reports of Lieut. Col. Francis L. Guenther, Fifth Artillery, Lieut. Col. Samuel B. M. Young, Fourth Cavalry, and Maj. Percival C. Pope, United States Marine Corps, which are attached to the report of Colonel Graham, marked Exhibit 3.¹

On July 13, as soon after the arrival of the troops as the railroad company provided a train, a force was dispatched under command of Lieutenant Colonel Guenther, Fifth Artillery, to open the Central Pacific Railroad to the eastward and to a junction with a force proceeding westward from Ogden under instructions from Brig. Gen. John R. Brooke, commanding the Department of the Platte.

Colonel Guenther with part of his command reached Truckee, near the eastern boundary of California, on the 14th of July, having placed whilst en route, portions of his force at points suitable to further the objects of protection to trains and, for the time being, of important parts of the railway construction. The force acting under the instructions of General Brooke and under the immediate command of Colonel Poland, had meantime been extended westward and reached to include Reno, Nev., on July 15. Under protection of the troops, which for a time, as deemed necessary, provided guards for trains, full operation of the railroad was resumed, the first through mail train from Ogden to San Francisco after the interruption caused by the strike reaching the latter place on July 16. The force acting under instructions from General Brooke was wholly withdrawn, with my assent, from the line of the railroad in this department on August 17. The battalion of marines was returned to Mare Island in part on August 11, and the remainder on August 20.

On the 11th of July, the day of the arrival of the command at Sacramento, a train was made up under protection of the troops and started

¹ Omitted.

for San Francisco, guarded by a detachment from Battery L, Fifth Artillery, under immediate command of Lieut. Delamere Skerrett. The train was derailed about 2 miles from Sacramento in consequence of injury done to the track, and three soldiers, Privates James Byrne, Peter Clark, and George W. Lubberden, were killed outright, and one, Private Wesley O. Dougan, mortally wounded; also, the engineer of the train was killed. There is no doubt the murder of the four soldiers and the engineer was the act of strikers who left Sacramento before the train was started, and also little doubt that it was known beforehand to a considerable number of other strikers that the track had been tampered with for the purpose of derailing the train. The place selected for throwing the train from the track was at a trestle crossing water, and approached by a narrow causeway. That loss of life would occur in case the train were thrown from the track was almost inevitable. Proceedings are in progress in the civil courts against several men charged with murder in causing death by the wrecking of the train.

On July 13, whilst Battery L, Fifth Artillery, was protecting railroad employees in making up trains, some strikers approached, commenced offensive talk to the troops, and growing bolder as others joined, began throwing missiles at the soldiers, one being struck. The soldiers were somewhat scattered or separated into small parties, owing to the encumbered condition of the railroad tracks and yards. In accordance with instructions received by the soldiers to fire shots in case of attack, some shots were fired with the result that one man of the party of strikers was killed and one wounded. No further molestation of the troops by the strikers requiring mention occurred thereafter.

The troops sent to Los Angeles and to Sacramento practically comprised the effective force of this department, and in view of the still unsettled state in Oakland, the possibility not seemingly to be disregarded that attempts then being made to involve the general trades and other unions with the American Railway Union would be successful and increase the malcontents by large numbers of idle men, and in view especially in such case that San Francisco, where large amounts of public moneys are kept, might become seriously involved, I made request to Captain Howison, commanding the Mare Island Navy-Yard, on July 11, to place at my disposal a force of sailors and marines from the ships at the navy-yard, which he had received instructions to do upon my application. Accordingly, on July 12 Lieut. Commander W. H. Reeder, United States Navy, reported with a command of 30 officers and 340 sailors and marines, drawn from the U. S. steamers *Charleston*, *Monterey*, and *Thetis* and the ship *Independence*. The force was armed and organized as infantry with a gun detachment and two gatling guns attached. This command, thoroughly efficient for any duty that occasion might require, was placed at the terminus of the railroad in Oakland, commonly designated as the Oakland Mole, and was charged immediately with giving such protection as might be necessary to prevent interference with track and trains at the mole, and also, in case of necessity, to go to the assistance of the State troops in Oakland to quell riots against the operation of the railroads in Oakland, in the vicinity of the mole. The presence at hand of this naval force was very beneficial in repressive effect upon the disorderly element in Oakland, and, upon occasion arising, was available for duty in San Francisco. The naval force was in part relieved on July 24, and the remainder on July 27, last, and returned to the navy-yard.

Attention is requested in this connection to the report by Lieut. Commander Reeder, attached and marked Exhibit 5.¹

The action taken by the State forces of California in concert with the troops of my command, or dependent upon the action taken by the troops, was briefly as follows:

The First and Third regiments of infantry, National Guard, acted in concert with the troops and under the orders of Colonel Graham at Sacramento from July 12 to July 26, when they were relieved by the Eighth Regiment, National Guard, California, which performed duty until July 30, when it was relieved. Two companies of the First Regiment of the State National Guard performed duty in guarding trains on the line of the railroad in conjunction with the troops and under the immediate command of Lieutenant Colonel Guenther, from July 18 to July 24, when they were withdrawn.

The presence of the naval force under command of Lieutenant Commander Reeder at hand for service in Oakland or San Francisco, ready in case of emergency for service in San Francisco, was taken advantage of by the State authorities to transfer a regiment and some companies in addition of the National Guard from San Francisco to Oakland. The disturbance there was quelled by the State troops and the local civil authorities. Colonel Graham reports that the State force rendered efficient service in conjunction with his command, in reference to which attention is invited to his report, marked Exhibit 3,¹ attached hereto.

I desire to testify to the essential service rendered by the naval forces placed at my disposal—the battalion of the Marine Corps acting under command of Colonel Graham at Sacramento, and the force of sailors and marines under command of Lieutenant Commander Reeder assigned for duty in the harbor of San Francisco. These additions from the Navy to the effective force of this department were of essential assistance at the time, especially in permitting action with more confidence as to favorable results than would otherwise have been the case.

To Colonel Shafter and the officers and soldiers of his command, much credit is due for preventing, by firm and judicious action, most serious disorders at Los Angeles and other places in southern California. The condition had become such that the United States courts could not enforce their mandates, and the strikers were ready and intended to commit whatever violence might be necessary to prevent resumption of the operation of the railroads in southern California for any purpose, except upon terms of their dictation.

The services rendered by Colonel Graham and the officers and soldiers of the command at Sacramento and on the line of railway to the East, were most important and done with efficiency correspondingly fit.

At Sacramento, the phase of the trouble upon arrival of the command had far passed the limits implied by the word strike. The acts, manner of procedure and intent, as evidenced by acts of those engaged, were distinctly insurrectionary. In this connection attention is invited to Exhibit 4¹ attached, also to Exhibit 2.¹ Except for the action of the troops the disorder would have been prolonged, and in all probability would not have been ended without serious bloodshed and after destruction of much property.

Notwithstanding the fact that for several weeks past active opposition to the operation of the railroad by its officials has seemed to have

¹ Omitted.

disappeared, yet the presence of a large number of idle, discontented men at Sacramento and other points, and the numerous attempts that have been made to derail trains have indicated the necessity for great caution in wholly withdrawing the force from that part of the line of the railroad from Sacramento to Truckee, Cal. This part embraces the very valuable railroad structures in the Sierra Nevada mountains, comparatively isolated and difficult of protection by ordinary means. Owing to the national importance of maintaining uninterrupted mail communication and traffic over this line, I have felt it essential to retain the troops on this part of the line of the railroad longer than appears to have been necessary in other places where used during the recent troubles. It is intended to withdraw the remainder of Colonel Graham's force at or near the end of the present month.

The instruction in general in the department during the year has been satisfactory under the conditions existing. All the troops in the department, with the exception possibly of three companies, will have had field service and practice instruction absent from their posts before the close of the year.

A statement¹ presenting the methods and indicating results of the instruction had at the lyceums of the several posts, is attached hereto marked Exhibit A.¹

The condition in respect to discipline has been good. For the year ending June 30, 1894, there was a marked decrease in the per cent of desertions over that of each of the three years preceding, as is shown in Exhibit G to Document A.¹

The report of target practice in small arms firing, not attached hereto, will be forwarded at the close of the practice season.

The heavy artillery practice of the batteries of the Fifth Artillery at the Presidio of San Francisco, Alcatraz Island, and Fort Mason, has been good in view of the limited allowance of ammunition allowable the present year for practice.

The annual firing practice of Light Batteries D and F, Fifth Artillery, has not yet been had, but it is my intention that the batteries shall make a march for instruction in September or October, when the practice will be had.

For particulars relating to administration in the several staff departments and recommendations by their chiefs, on duty at these headquarters, attention is requested to their reports.

I am sir, very respectfully, your obedient servant,

THOS. H. RUGER,
Brigadier-General, Commanding.

The ADJUTANT-GENERAL UNITED STATES ARMY,
Washington, D. C.

¹ Omitted.

REPORT OF BRIG. GEN. WESLEY MERRITT.

HEADQUARTERS DEPARTMENT OF DAKOTA,
St. Paul, Minn., August 25, 1894.

SIR: I have the honor to submit a report of military affairs in this Department from July 1, 1893, to August 25, 1894, inclusive.

The following is the record of events for the time above-mentioned:

July 4, 1893.—Companies A, B, D, E, G, and H, Third Infantry, Capt. C. Hobart, commanding, left Fort Snelling, en route to Camp Lakeview, near Lake City, Minn., for encampment with the National Guard, State of Minnesota. Arrived there July 8. Distance marched, 70 miles. The command left camp for Fort Snelling July 28, arriving at Hastings, Minn., July 31, 1893. Distance marched, 43 miles.

July 24, 1893.—Company B, Twenty-second Infantry, Capt. W. Conway, commanding, left Fort Keogh and proceeded to Camp Merritt, Mont., to relieve Company D, Twenty-fifth Infantry, from duty at that camp. Arrived July 29. Distance marched, 96 miles.

July 30, 1893.—Company D, Twenty-fifth Infantry, First Lieut. J. P. O'Neil, commanding, left Camp Merritt, en route to its proper station, station, Fort Custer, Mont. Arrived at West Tullocks Fork July 31, and at Fort Custer August 1. Distance marched, 60 miles.

August 1, 1893.—Headquarters and companies A, B, D, E, G, and H, Third Infantry, Col. E. C. Mason, commanding, left Hastings, Minn., en route to station, Fort Snelling, Minn. Arrived there August 2. Distance marched, 25 miles.

August 12, 1893.—First Lieut. Leighton Finley, with 32 enlisted men of the Tenth Cavalry, left Fort Custer, Mont., in charge of 32 horses to be used in connection with the cavalry competitions at Fort Keogh, Mont. Arrived there August 16. Left Fort Keogh August 20 and returned to station, Fort Custer, August 25. Distance marched, 270 miles.

September 1, 1893.—Companies F, G, and H, Twenty-fifth Infantry, Maj. Chambers McKibbin, commanding, left Fort Missoula, Mont., on practice march through the Bitter Root Valley. Returned to post September 14. Distance marched, 98 miles.

September 18, 1893.—Companies B, C, and E, Twenty-fifth Infantry, Capt. R. H. R. Loughborough, commanding, left Fort Buford, N. Dak., on a practice march. Returned to post September 27. Distance marched, 92 miles.

September 19, 1893.—Companies B, E, G, and H, Twentieth Infantry, Capt. W. S. McCaskey, commanding, left Fort Assinniboine, Mont., for camp of instruction on Beaver Creek, Montana. Returned to post September 30. Distance marched, about 90 miles.

September 20, 1893.—Companies A and D, Twenty-fifth Infantry, Capt. O. J. Sweet, commanding, left Fort Custer, Mont., on a practice march. Returned to post September 30. Distance marched, 90 miles.

September 20, 1893.—The band and companies A, C, and H, Twenty-second Infantry, and troop L, Eighth Cavalry, Maj. E. H. Liscum, Twenty-second Infantry, commanding, left Fort Keogh on a practice march. Returned September 30. Distance marched, 24 miles.

September 21, 1893.—Companies B and D, Twelfth Infantry, Maj. J. H. Gageby, commanding, left Fort Sully, S. Dak., on a practice march. Returned September 28. Distance marched, 40 miles.

September 21, 1893.—Troops C and F, Tenth Cavalry, Maj. J. M. Kelley, commanding, left Fort Assinniboine for camp of instruction on Beaver Creek, Montana. Returned to post September 24. Distance marched, 36 miles.

October 2, 1893.—The post of Camp Poplar River, Mont., was abandoned in compliance with General Orders 55, current series, Headquarters of the Army. Maj. L. Wheaton, with Company C, Twentieth Infantry, proceeded by rail to Fort Buford, N. Dak. Distance, 65 miles. Company I, Twentieth Infantry, Capt. H. A. Greene, commanding, proceeded by rail to Fort Assinniboine, Mont., for station. Distance, 231 miles.

October 6, 1893.—Troop D, Sixth Cavalry, Capt. G. S. Scott, commanding, left camp on Lower Geyser Basin and marched to Fort Yellowstone, Wyo. Distance, 40 miles.

October 7, 1893.—Headquarters and Troops A, B, C, E, I, and K, Eighth Cavalry, Col. C. H. Carlton, commanding, left Fort Meade on practice march. Returned October 10. Distance marched, 43 miles.

October 9, 1893.—Companies D, F, and G, Twenty-second Infantry, and Troop A, Tenth Cavalry, left Fort Keogh for practice march. Returned October 19. Distance marched, 13 miles.

October 12, 1893.—Headquarters and Troops B, E, G, and K, Tenth Cavalry, and Troop L, First Cavalry, Lieut. Col. D. Perry, commanding, left Fort Custer for practice march. Returned October 21. Distance marched, 126 miles.

October 16, 1893.—Troops D and H, Tenth Cavalry, Maj. T. J. Wint, commanding, left Fort Buford for practice march. Returned October 25. Distance marched, 116 miles.

November 10, 1893.—Company F, Twenty-fifth Infantry, Capt. George Andrews, commanding, left Fort Missoula and engaged in an unsuccessful attempt to find and relieve a party of hunters, known as the Carlin party, who were snowbound in the Clearwater country, Idaho. Returned to post November 24. Distance marched, about 90 miles.

November 13, 1893.—Company F, Twenty-second Infantry, Capt. M. Hooton, commanding, left Fort Keogh and proceeded to Camp Merritt, Mont., for a tour of duty at that substation. Arrived there November 17. Distance marched, 90 miles.

November 19, 1893.—Upon being relieved by company F, company B, Twenty-second Infantry, under command of Capt. William Conway, left Camp Merritt, en route to proper station, arriving at Fort Keogh, Mont., November 23. Distance marched, 90 miles.

November 29, 1893.—Company C, Third Infantry, Second Lieut. H. M. Reeve, commanding, left Chicago, Ill., en route to Fort Snelling, Minn., its proper station, arriving November 30. Distance, 417 miles.

December 26, 1893.—Company F, Third Infantry, First Lieut. C. G. Dwyer, commanding, left Chicago, Ill., and returned to its proper station, arriving at Fort Snelling, Minn., December 27. Distance, 417 miles.

March 2, 1894.—Company G, Twenty-second Infantry, Capt. J. G. Ballance, commanding, left Fort Keogh, Mont., en route to Camp Merritt for temporary duty. Arrived March 9. Distance marched, 90 miles.

March 10, 1894.—Upon being relieved by company G, company F, Twenty-second Infantry, First Lieut. William M. Swaine, commanding,

left Camp Merritt for proper station, and arrived at Fort Keogh March 14. Distance marched, 90 miles.

April 25, 1894.—Companies A, B, C, D, F, and H, Twenty-second Infantry, Lieut. Col. J. H. Page, commanding, left Fort Keogh and proceeded to Forsyth, Mont., to intercept and arrest a contingent of Coxey's army, known as the "Hogan party," who had unlawfully seized a Northern Pacific Railroad train at Butte City, Mont., and resisted arrest by deputy United States marshals at Billings, Mont. The arrest was effected about midnight, and the 331 men comprising the party put under guard.

April 25, 1894.—Troops B, E, G, and K, Tenth Cavalry, Lieut. Col. D. Perry, commanding, left Fort Custer at 8 p. m. for Custer Station to cooperate with Colonel Page's command in the arrest of the Hogan contingent of Commonwealers. Arrived about 2 a. m., on the 26th, and returned to Fort Custer April 27. Distance marched, 70 miles.

April 29, 1894.—Companies A, C, and H, Twenty-second Infantry, Maj. E. H. Liscum, commanding, left Forsyth en route to Helena, Mont., in charge of the prisoners captured at the former point. Distance traveled, 340 miles. Lieutenant-Colonel Page, with companies B, D, and F, Twenty-second Infantry, returned to Fort Keogh the same day. Distance, 43 miles.

April 29, 1894.—Companies A, B, D, and G, Third Infantry, Maj. J. H. Patterson, commanding, left Fort Snelling and proceeded by rail to Grand Forks, N. Dak., to assist the United States marshal of the district of North Dakota in executing the process of the United States court. Arrived there on the 30th instant. Distance traveled, 376 miles.

May 3, 1894.—Companies A, B, D, and G, Third Infantry, Maj. J. H. Patterson, commanding, left Grand Forks, N. Dak., en route to proper station, arriving at Fort Snelling May 4. Distance, 326, miles.

May 4, 1894.—Company B, Twenty-fifth Infantry, Capt. R. H. R. Loughborough, commanding, left Fort Buford and proceeded by rail to Fort Missoula, to take station. Arrived May 6. Distance, 649 miles.

May 14, 1894.—Troops A and C, Eighth Cavalry, Capt. J. B. Hickey, commanding, left Fort Meade, en route to Fort Yates. Arrived at latter post May 26. Distance marched, 210 miles.

May 14, 1894.—Troops F and G, Eighth Cavalry, Capt. E. A. Ellis, commanding, left Fort Yates to take station at Fort Meade, where they arrived May 26. Distance marched, 210 miles.

May 24, 1894.—Company G, Twenty-fifth Infantry, Capt. D. B. Wilson, commanding, left Fort Missoula and proceeded by rail to Arlee, Mont., to assist United States marshal in controlling a number of commonwealers who had been arrested by the civil authorities at that point. Distance traveled, 27 miles.

May 30, 1894.—Troop D, Sixth Cavalry, Capt. G. S. Scott, commanding, left Fort Yellowstone, and on the following day, May 31, established a permanent camp at Lower Geyser Basin, Wyoming. Distance marched, 38 miles.

June 5, 1894.—Company G, Twenty-fifth Infantry, Capt. D. B. Wilson, commanding, left Arlee, Mont., en route to station and arrived at Fort Missoula the same day. Distance traveled, 27 miles.

June 19, 1894.—Headquarters band, and companies A, B, C, D, E, F, G, and H, Third Infantry, left Fort Snelling en route to Lake City, Minn., for encampment with the National Guard of Minnesota. Arrived at Camp Lakeview June 24. Distance marched, 69 miles.

July 7, 1894.—Companies A, B, C, D, E, F, G, and H, Third Infantry, Col. E. O. Mason, commanding, left Camp Lakeview, near Lake City, Minn., en route to station, Fort Snelling, Minn., arriving there same day. Distance, 69 miles.

July 7, 1894.—Companies E and H, Third Infantry, Captain Hobart, commanding, were detached from Colonel Mason's command at St. Paul and embarked on the west-bound Northern Pacific Railroad passenger train, leaving St. Paul at 5.45 p. m. en route to eastern boundary of Montana as train guard. Arrived at Fort Keogh at 2 p. m. July 9. Distance traveled by rail, 746 miles.

July 7, 1894.—Troop I, Sixth Cavalry, under First Lieut. J. T. Nance, left Fort Yellowstone for Bozeman Tunnel, on Northern Pacific Railroad, arriving there in the evening of the 8th.

July 7, 1894.—Troops A and C, Eighth Cavalry, Capt. J. B. Hickey, commanding, left Fort Yates and marched to Mandan, N. Dak., to protect the bridge over Missouri River and other railroad property at that point. Arrived July 9. Distance marched about 60 miles.

July 7, 1894.—Troops D and H, Tenth Cavalry, Maj. T. J. Wint, commanding, left Fort Buford, N. Dak., and proceeded to Glendive, Mont., where they arrived on the 10th. Distance marched, about 80 miles. This command looked after railroad property as far west as Cedar Creek Bridge.

July 7, 1894.—Troop L, Eighth Cavalry (Casey's Scouts), under Second Lieut. F. C. Marshall, Eighth Cavalry, left Fort Keogh to guard the bridge across Rosebud River near Forsyth, Mont. Distance, 35 miles.

July 7, 1894.—Troop A, Tenth Cavalry, Second Lieut. R. L. Livermore, Eighth Cavalry, commanding, left Fort Keogh to guard bridges over Powder River and O'Fallon Creek, on the Northern Pacific Railroad. Distance, about 67 miles.

July 7, 1894.—Troops B and G, Tenth Cavalry, under command of Capt. William Davis, jr., left Fort Custer to protect the Big Horn Tunnel about 1 mile east of Custer Station. Distance, 36 miles.

July 7, 1894.—Troop K, Tenth Cavalry, Capt. R. D. Read, jr., commanding, left Fort Custer en route to Billings, Mont., to protect railroad property at that point. Distance marched, 85 miles.

July 7, 1894.—Companies A and D, Twenty-fifth Infantry, Capt. J. C. Ord, commanding, left Fort Custer and proceeded to Custer Station, Mont., arriving on the following day; thence, under telegraphic instructions from these headquarters of the 9th instant, this command took the west-bound train on the Northern Pacific Railroad and went to Livingston, Mont. Distance marched, 260 miles.

July 8, 1894.—Company F, Twenty-fifth Infantry, Capt. Geo. Andrews, commanding, left Fort Missoula and proceeded to a point about 12 miles west of Missoula to guard railroad trestles.

July 8, 1894.—Companies B and H, Twenty-fifth Infantry, left Fort Missoula and proceeded to the yards of the Northern Pacific Railroad near Missoula, to guard railroad property there.

July 9, 1894.—Companies B and D, Twenty-second Infantry, Capt. B. C. Lockwood, commanding, left Fort Keogh on west-bound train of the Northern Pacific Railroad. At Custer Station found a command consisting of companies A and D, Twenty-fifth Infantry, under Capt. J. C. Ord, and the combined commands then proceeded to Billings, Mont., where they arrived at 10 p. m., same date.

July 10, 1894.—Companies B and D, Twenty-second Infantry, and A and D, Twenty-fifth Infantry, Capt. B. C. Lockwood, commanding,

left Billings as guard to two Northern Pacific trains, one west-bound passenger train having been tied up at that point for thirteen days. Arrived at Livingston in the evening of the same day. Some force had to be displayed at this point to keep a crowd assembled there from interfering with railroad employees. Leaving the two companies of the Twenty-fifth Infantry at Livingston, companies B and D, of the Twenty-second Infantry, left for Logan, Mont., in charge of the two trains, remaining there over night. On the following day the command left Logan and proceeded to Helena, Mont., arriving at noon. After a few hours' delay at that point proceeded to Garrison, Mont., where it remained over night, and proceeded next day on west-bound Northern Pacific train to Hellgate, where a bridge had been burned. Exchanged trains there with Missoula command under Capt. C. L. Hodges and returned to station, Fort Keogh, July 15, 1894.

July 10, 1894.—Small detachments of Major McKibbin's command of the Twenty-fifth Infantry were sent to Jocko and Bonner bridges and to Rattlesnake, Mont.

July 12, 1894.—Capt. C. L. Hodges, with detachment of the Twenty-fifth Infantry, took the east-bound train on the Northern Pacific Railroad and proceeded to Gold Creek, where a bridge had been burned, reached there the same evening.

July 12, 1894.—After arrival of companies A and D, Twenty-fifth Infantry, at Livingston, on July 10, a detachment consisting of 1 non-commissioned officer and 6 privates was placed in the vicinity of the railroad bridge over Big Boulder River, about 40 miles east of Livingston. The bridge about 1 or 2 miles east of the town was also guarded by a small detachment from the same command.

July 13, 1894.—Company F, Twenty-second Infantry, Capt. Mott, Hooton, commanding, left Fort Keogh as guard to Northern Pacific train, leaving that post at 7 p. m. Of this command Lieut. T. M. Moody and 15 men went into permanent camp at Logan, Mont. The balance of the company arrived at Fort Missoula July 18, and returned to Fort Keogh the same day on east-bound train.

July 15, 1894.—Company B, Twenty-second Infantry, Capt. J. J. Crittenden, commanding, left Fort Keogh as guard on west-bound Northern Pacific train, proceeding to Clinton, Mont., where detachment was relieved by guard from Fort Missoula. Returned to Fort Keogh July 19, 1894.

July 15, 1894.—Second Lieut. H. L. McCorkle, with a small detachment of the Twenty-fifth Infantry, left Fort Missoula and proceeded to Arlee, Mont., as train guard, returning on the east-bound train same day.

July 16, 1894.—Maj. C. McKibbin and Capt. R. H. R. Loughborough, with about one-half the enlisted strength of Company B, Twenty-fifth Infantry, were withdrawn from railroad yards at Missoula and returned to Fort Missoula.

July 17, 1894.—Captain Hodges, commanding a battalion of the Twenty-fifth Infantry in railway yards near Missoula, reported the burning of a trestle 3 miles west, and the explosion of a dynamite cartridge under an engine about 3 miles east of town.

July 17, 1894.—A train guard, consisting of First Lieut. F. B. Jones, adjutant Twenty-second Infantry, and 12 men of Company D, same regiment, left Fort Keogh and proceeded as far as Drummond, Mont., on the west-bound train, where they met a detachment of the command from Fort Missoula. Returned to Fort Keogh July 20.

July 18, 1894.—A detachment of companies D and F, Twenty-second Infantry, under First Lieut. R. N. Getty, R. Q. M., left Fort Keogh and proceeded to Elliston, Mont., where he exchanged trains with detachment of the Twenty-fifth Infantry from Fort Missoula, and returned to post, arriving July 20.

July 18, 1894.—First Lieut. C. A. Devol, with small detachment, took east-bound train at Missoula as guard to Helena, where he arrived about noon. Returned to Missoula on west-bound train the same evening.

July 18, 1894.—The First Battalion, Twentieth Infantry, consisting of companies B, D, E, and H, Col. W. H. Penrose, commanding, left Fort Assinniboine for Helena, arriving same day.

July 19, 1894.—The Second Battalion, Twentieth Infantry, consisting of companies A, F and G, Capt. J. B. Rodman, commanding, left Fort Assinniboine for Helena, arriving same day.

July 19, 1894.—First Lieut. J. O. Green, with small detachment of the Twenty-fifth Infantry, left Missoula as train guard to east-bound passenger. Met west-bound train at Elliston and exchanged guards.

July 19, 1894.—Capt. F. W. Roe, with 15 men of Company C, Third Infantry, left Fort Keogh on west-bound train as guard, and proceeded to Blossburg, Mont., where he exchanged with detachment from Fort Missoula. Returned to Fort Keogh July 21.

July 20, 1894.—Company H, Twenty-second Infantry, Capt. H. H. Ketchum, commanding, left Helena and proceeded by rail to Marysville, Mont., arriving same day.

July 21, 1894.—Detachment of Company C, Third Infantry, under command of First Lieut. Omar Bundy, Third Infantry, left Fort Keogh as guard on train No. 1, to Bonita, Mont., 26 miles east of Missoula, where it was met by detachment of the Twenty-fifth Infantry. Returned to Fort Keogh July 23.

July 23, 1894.—Companies A, B, D, E, F, G, and H, Twentieth Infantry, Col. W. H. Penrose, commanding, left Helena for Butte, where they arrived same date. Distance, 102 miles.

July 23, 1894.—First Lieut. George J. Godfrey with a detachment of 14 men, Twenty-second Infantry, left Fort Keogh en route to Helena, as train guard, where they exchanged with detachment of the Twenty-fifth Infantry from Fort Missoula. Returned to post July 25.

July 24, 1894.—Capt. J. J. Crittenden, with 14 enlisted men of the Twenty-second Infantry, left Fort Keogh as escort to Northern Pacific train. At Blossburg, Mont., the detachment exchanged with troops from Fort Missoula, and returned to Fort Keogh in the morning of the 26th.

July 25, 1894.—A detachment of Twenty-second Infantry, under Lieut. T. M. Moody, left Fort Keogh as train guard to west-bound Northern Pacific train. Exchanged trains with detachment from Fort Missoula at Gold Creek and returned to Fort Keogh July 27.

July 25, 1894.—Companies B, E, and H, Twentieth Infantry, Colonel Penrose, commanding, left camp at Butte and proceeded by rail to Helena, Mont., arriving there the same day. Distance, 102 miles.

July 26, 1894.—Companies A, C, and H, Twenty-second Infantry, Maj. E. H. Liscum, commanding, left Helena and returned to proper station, Fort Keogh, same day. Distance, 383 miles.

July 29, 1894.—Company C, Third Infantry, Capt. F. W. Roc, commanding, left Fort Keogh on west-bound train to guard the Bozeman Tunnel near Muir, Mont. Arrived same date.

July 29, 1894.—Troop I, Sixth Cavalry, First Lieut. J. T. Nance, commanding, left camp in vicinity of Bozeman Tunnel and returned to Fort Yellowstone, arriving in the morning of July 31. Distance marched, 78 miles.

July 29, 1894.—Thirty-six men of Company F, under Capt. George Andrews, and 20 men of Company G, Twenty-fifth Infantry, under Lieut. H. L. Kinnison, were withdrawn from duty in connection with the guarding of trestlework in the vicinity of Missoula, and returned to Fort Missoula.

July 30, 1894.—Company B, Twentieth Infantry, Capt. William S. McCaskey, commanding, left Helena for Fort Assinniboine, Mont., arriving there same day. Distance traveled, 209 miles.

August 2, 1894.—Company E, Third Infantry, Capt. M. C. Wilkinson, commanding, left Dickinson, N. Dak., and proceeded by rail to Fort Keogh, arriving same day. Distance traveled, 187 miles.

August 3, 1894.—A detachment of 14 men of Company A, Twenty-second Infantry, Second Lieut. H. G. Hambright, commanding, left Fort Keogh to guard railroad bridge at Powder River, Montana. Detachment withdrawn and returned to post August 6. Distance, 40 miles.

August 3, 1894.—Colonel Penrose, commanding battalion of Twentieth Infantry at Helena, reported an attempt made to burn a cement house on west side of Mullen Tunnel, containing a large quantity of giant powder, and that soldiers at the risk of their lives removed the powder and put out the fire.

August 3, 1894.—Company H, Third Infantry, Capt. Charles Hobart, commanding, left Livingston for Fort Keogh on east-bound Northern Pacific passenger train as guard. Arrived at Fort Keogh same day. Distance traveled, 260 miles.

August 4, 1894.—Troop A, Tenth Cavalry, Capt. C. L. Cooper, commanding, was relieved from duty guarding railroad bridge at Powder River and returned to Fort Keogh same day. Distance, 40 miles.

August 4, 1894.—A detachment of 15 men, Twenty-fifth Infantry, Second Lieut. C. G. French, commanding, left Livingston for Muir, Mont., for duty as guard to railroad property. Distance traveled, 12 miles.

August 4, 1894.—Company C, Third Infantry, Capt. F. W. Roe, commanding, was relieved from duty as guard to railroad property at Muir, and proceeded by rail to Fort Keogh, arriving same day. Distance traveled, 272 miles.

August 8, 1894.—Troops D and H, Tenth Cavalry, Maj. T. J. Wint, commanding, broke camp at Glendive, Mont., and started on a practice march back to their station, Fort Buford, N. Dak., arriving there August 12. Distance marched, 80 miles.

August 9, 1894.—Troops B and G, Tenth Cavalry, Capt. William Davis, jr., commanding, broke camp at Custer Station, Mont., and started on a practice march, going in a westerly direction by way of Conway, Pompeys Pillar, Huntley, Billings, and Prior Creek, thence in a north-easterly direction by way of Spring Creek back to Fort Custer, arriving at post on August 16. Distance marched, 106 miles.

August 10, 1894.—Troops A and C, Eighth Cavalry, Capt. James B. Hickey, commanding, broke camp at Mandan, N. Dak., and started on a practice march back to their station. Camped at Cannon Ball in evening of same day, and, resuming march early next morning, reached Fort Yates in afternoon of that day. Distance marched, 60 miles.

August 12, 1894.—Companies C, E, and H, Third Infantry, Capt. M. C. Wilkinson, commanding, left Fort Keogh, en route to station, Fort Snelling; arrived August 13. Distance traveled, 746 miles.

August 14, 1894.—First Lieut. J. P. O'Neil, Twenty-fifth Infantry, with a detachment of 10 men of Company D, Twenty-fifth Infantry, left Livingston, Mont., as guard on freight train from that point to Cokedale, on Northern Pacific Railroad, and return.

August 14, 1894.—Second Lieut. H. L. Kinnison, Twenty-fifth Infantry, with detachment of 17 men of Company G, Twenty-fifth Infantry, left Fort Missoula to guard the trestles on Northern Pacific Railroad at Marent and O'Keefe, relieving the guard under Second Lieut. V. A. Caldwell, which returned to Fort Missoula on August 15. Lieutenant Kinnison and his detachment returned to Fort Missoula on August 18.

August 18, 1894.—Troop K, Tenth Cavalry, Capt. R. D. Read, jr., commanding, broke camp at Billings, Mont., and started on a practice march back to Fort Custer, arriving there August 20. Distance marched, 85 miles.

August 18, 1894.—Companies D, E, and H, Twentieth Infantry, Colonel Penrose, commanding, broke camp at Helena and returned by rail to Fort Assinniboine, arriving same day. Distance traveled, 209 miles.

August 19, 1894.—Companies A, F, and G, Twentieth Infantry, Capt. John B. Rodman, commanding, were relieved from duty guarding railroad property at Butte, Mont., and returned by rail to Fort Assinniboine, arriving same date. Distance traveled, 311 miles.

August 19, 1894.—A detachment of 9 men of the Twenty-fifth Infantry, Second Lieut. Samuel Burkhardt, jr., commanding, left Livingston as guard on freight train from that point to Cokedale, on Northern Pacific Railroad, and return.

August 20, 1894.—Capt. O. J. Sweet, commanding battalion of Twenty-fifth Infantry, at Livingston, Mont., reported that he withdrew guard over the Northern Pacific Railroad shops and yards at that point on the 17th instant, after consultation with the railroad officials, and that an attempt was made the same night to burn the shops by setting fire to a newly-painted caboose in the carpenter shop. The fire was quickly discovered and extinguished, however, before any damage was done, and the guard over the property was replaced.

August 25, 1894.—Companies A and D, Twenty-fifth Infantry, Capt. O. J. Sweet, commanding, in camp at Livingston, Mont., are now the only troops on duty under the instructions to open the Northern Pacific Railroad for traffic, and to protect its property. (These troops are under orders to break camp on September 1, and return to their station, Fort Custer, Mont.)

As is intimated in the foregoing data, covering the movement of troops, there have been during the last summer in the northern portion of my department two remarkable outbreaks, which it has been necessary to control by the use of the Army. One in April, the organization and movement of the so-called army of Commonwealers, or Coxeyites, the other the strike commencing in June, on the Northern Pacific Railroad, precipitated in sympathy with the strike at Pullman, Ill.

The first of these developed to the greatest extent in the farther northwestern portion of this department, in the State of Montana, being augmented and aggravated by causes like to those which made the strike occurring subsequently of considerable proportions, and more or less difficult to control. These causes are, a large floating, mining, and at times unemployed, population, which, being more or less free from the restraint of law, is always ready to join any movement in

which idleness, viciousness, and lawlessness are found. Another cause is an affected sympathy extended to the lawless by both high and low in office, who depend on the suffrage of the less law-abiding for their positions. This principle of dependence is apparent among all classes of the community. The merchant, the grocer, the tradesman, and all who live by the patronage of others, are constrained to openly express sympathy with the violent, and in many cases with the lawless, because of the principle of boycotting, which has been reduced to a science in this newly and meagerly populated State. While many in these communities, of the classes of which I speak, privately condemn lawless conduct, fear that their means of procuring a livelihood will be taken from them by the boycott, places them, so far as their public expressions of opinion go, among the worst element.

It is not wonderful, under these circumstances, that lawlessness was in the ascendant in Montana during both of the abnormal outbreaks referred to.

During the Coxeyite troubles the undersigned was absent on leave and the management of affairs devolved on Colonel Swaine, Twenty-second Infantry, who was in command of the department, by direction of the President. It is perhaps only necessary to add to the reports made at the time, and the data contained in the foregoing record, that although resistance was made to the civil authorities, in no instance did the people included in this outbreak resist the military when it appeared on the scene of disturbance. The troops were used with complete discretion by the officers in command, and the law was enforced without violence.

It was on the 26th of June that the sympathetic strike with the Pullman strikers was declared. Every wheel on the Northern Pacific Railroad was stopped in its course. Freight trains and passenger trains were halted where this order found them, and with untold inconvenience to the traveling public and great losses to the commercial, all traffic on the road west of Fargo was discontinued. This continued till the 7th of July, when by military intervention the railroad was open at first to a fitful service, and later kept in regular operation under military protection.

It is difficult to conceive a worse state of affairs than existed on this road. There was no mail communication with any point west of Fargo. The posts situated on this road could hold no communication with department headquarters save by telegraph. If the blockade had been continued, communities living and troops stationed at different points on the road were in danger of starvation resulting from the stoppage of the movement of supply trains.

Under these conditions I represented the facts to Headquarters of the Army, and on the 6th of July received orders directing the use of the military force of this department "to remove obstructions to the mails and to execute any orders of the United States court for the protection of property in the hands of receivers appointed by such court, and for preventing interruption of interstate commerce and to give such protection to said railroad as will prevent any unlawful and forcible obstruction to the regular and orderly operation of said road for postal, military, naval, and all other Government service."

As a preliminary to the execution of this order, I recalled the Third Infantry, then on duty at Lake City, Minn., in the camp of the National Guard. This was necessary, as this regiment, of all the troops serving in the department, was the only force at hand which could be moved by rail.

In the meantime the road was threatened with destruction at its more vulnerable points. Throughout Montana there are many extensive bridges, and in places long tunnels, the destruction of which would have paralyzed the road for months. To prevent this destruction by the strikers and their lawless associates, I ordered Major Liscum, Twenty-second Infantry, who had remained at Helena since the Coxeyite troubles, to detach enough of his force to guard the tunnels and bridges to the west of Helena. As a further means of protection of the road, a squadron of the Eighth Cavalry, under Captain Hickey, was ordered to march from Fort Yates to Mandan, in North Dakota, to protect the bridge over the Missouri River and to guard from injury other important property in that vicinity. At the same time, Major Wint, with a squadron of the Tenth Cavalry, marched from Fort Buford to Glendive, Mont., and made dispositions to protect the road by patrolling as far west as Cedar Creek Bridge.

Also two troops of cavalry, under Lieutenants Marshall and Livermore, marched from Fort Keogh, one east as far as the Powder River and one west as far as the Rosebud, stationing guards where most needed. A force of infantry was in addition detached from Fort Keogh to protect the Tongue River Bridge. To protect the Big Horn Tunnel and Bridge two troops of cavalry, under Captain Davis, from Fort Custer, were marched across the country, while a third troop, under Captain Read, from the same post, made its way across country to take station at Billings, a center of the malcontents.

As a further precaution the two companies of the Twenty-fifth Infantry, stationed at Fort Custer, were marched to Custer Station, to be available for any service after the trains commenced running. They were soon found to be necessary at Livingston, which proved to be the worst nest of lawlessness on the entire line.

For the rest a troop of the Sixth Cavalry at Fort Yellowstone constituted my remaining movable force to guard the railroad property. This made a rapid march across country to the Bozeman Tunnel, and made dispositions for the protection of that important work and destructible structures east and west.

It is especially gratifying to note that all these movements, which involved, in many instances, considerable marching under the least pleasant conditions, were performed promptly and in the most creditable manner. The dispatch with which the troops moved, without being cautioned to that effect, the celerity with which they reached their several destinations, and the clearness with which orders were understood and reports were made reflect credit on the soldierly instincts of the responsible officers at the posts and in the field.

While these dispositions were being made by the troops the first through train on the Northern Pacific Railroad, which started from St. Paul on the 7th of July, with a guard of two companies of the Third Infantry under Captain Hobart, was making its way toward the Pacific. It required nearly forty-six hours for this train to reach Fort Keogh, at which point the guard was relieved by two companies of the Twenty-second Infantry under Captain Lockwood, which proceeded as a guard until the east-bound train from the Pacific was met, being guarded by troops from Fort Missoula, which in turn had relieved a guard of troops from the Department of the Columbia. By direction of General Schofield, commanding the Army, I had previously corresponded with General Otis, and with him had concerted measures of united action.

Up to the 9th of July I had used only the troops along the line of

the Northern Pacific Railroad, except the cavalry which marched across country as heretofore specified. On July 9 it became necessary, in consequence of the threatening condition of affairs, to move part of the garrison at Fort Assinniboine to Helena. A telegram was dispatched to Colonel Penrose to move by rail four companies of his command to Helena. This dispatch was in cipher, as I had already been notified that telegraph and railroad employees on the Great Northern were in sympathy with the strikers and would oppose or at least refuse to work in the movement of troops.

This anticipation was confirmed when the chief quartermaster, in obedience to instructions, called upon the Great Northern road to furnish transportation for the troops from Assinniboine, as is evidenced by the following from Colonel Clough, the vice-president of the road:

GREAT NORTHERN RAILWAY LINE,
St. Paul, Minn., July 10, 1894.

GENERAL: Referring to your request for facilities to transport troops over the lines of this company between Assinniboine and Helena, I need not say that the full resources of this company are at all times and without reserve subject to the command of the Government for the movement of its forces and property. We wish, however, to inform you of the precise extent and condition of these resources, that you may judge for yourself what the exigencies require. We have the road and an abundance of equipment to do the work desired. The only force of enginemen and trainmen in the region where the order must be executed are those in the employment of this company. Practically every one of these men are members of the American Railway Union. We have been reliably informed that the governing bodies of that organization have either decided to issue or have actually issued instructions to its men to decline to handle trains carrying troops during the existence of the present strike. We much fear that any order of this kind would receive immediate and unqualified obedience. Should this be the case, there would not be available any other crews to take their places, and the trains could not be moved with men now on the ground. It seems, therefore, unwise to attempt the execution of the movement until perfectly reliable train crews shall have been secured. We do not know where to find such in Montana. I think they will have to go from here unless the Government can itself furnish them. Can it do so? A special would have to be sent out from Pacific Junction, or Great Falls, to assemble the required cars, which are quite scattered. The starting of such a train would be so unusual an occurrence in that region that its purpose and destination would most probably be at once inferred, and a refusal to handle it might be immediately expected.

This condition of things is startling; but it exists, and all measures for the purpose in hand must be devised in view of it.

Very respectfully, yours,

W. P. CLOUGH, *Vice-President.*

Brig. Gen. WESLEY MERRITT,
Commanding Department of Dakota.

A further confirmation of the inability of the Government to move troops by the ordinary means of conveyance was furnished in the following communications and notice:

GREAT NORTHERN RAILWAY LINE,
St. Paul, Minn., July 12, 1894.

GENERAL: Confirming my statements in my recent letter to you and my conversation with you, I beg to herewith inclose for your information a copy of the notice bulletined by the American Railway Union upon points on our lines in Montana.

Yours, respectfully,

W. P. CLOUGH, *Vice-President.*

Brig. Gen. WESLEY MERRITT, U. S. A.,
Commanding Department of Dakota, City.

[Copy.]

GREAT FALLS, 11th.

All Conductors, Brakemen, Engineers, and Firemen:

At regular meeting of Local Union, No. 89, A. R. U., held this 11th day of July, it was ordered that all employees of the Great Northern, between Havre and Butte,

quit work the moment an attempt is made by the company to move troops between any points on other lines for the purpose of operating roads, employees of which are now out on strike, or protecting scabs. Should you be called upon to handle cars containing soldiers or implements of war, refuse to do so, advise us, and we will tie up the road. Acknowledge receipt of post copies.

J. R. CHENVERT, *President.*

E. L. WHITE, *Secretary.*

Fortunately, the emergency for the troops ordered to Helena did not transpire, though I had learned by communicating with Colonel Penrose at Fort Assinniboine that in the Twentieth Infantry at that post there were at least three reliable train crews which could be used in cases of emergency, and I had concluded to seize the transportation and use our own crews to run it if necessary.

About this time Mr. James J. Hill, president of the Great Northern, who was out on his road on the Pacific Slope, telegraphed me that his road was at the disposal of the Government to move troops or for any other purpose. Mr. Hill shortly afterwards returned to St. Paul, and on his return trip communicated with the leaders of the American Railway Union, giving them to understand the utter folly on their part of attempting resistance to a legitimate order. His influence, and the fact that the strike was losing its energy farther east, and had to all intents been futile on the Northern Pacific road, brought a change among the employees of the Great Northern, so that on July 17, when an order was issued for the movement of troops over a branch of the Great Northern to Helena and Butte, there was no difficulty in effecting the movement.

Colonel Penrose moved his command to Helena and thence to Butte. It was currently believed that there would be considerable violence in Butte upon an attempt being made to open traffic on the Northern Pacific branch from Logan, Mont., and the Union Pacific from the south. In consequence of this opinion General Brooke, of the Department of the Platte, after correspondence with me, sent a force under Colonel Bates from Omaha at the same time that the troops from this Department entered Butte. The presence of this considerable double force prevented any outbreak at Butte, if, indeed, there had been the danger there which was generally represented to be imminent by those who knew best the character of its large mining alien population.

As minute as this report may appear there are many details of the service which have not been entered into. In every case where engines or trains made their appearance without military guards, the new crews were surrounded by mobs and intimidated, abused, and in some instances roughly handled. At Livingston, a town at the junction of the Yellowstone Park branch of the Northern Pacific Railroad, a strong force of troops was constantly kept on duty, nor has it been considered wise to reduce this force up to the present date.

At this town of Livingston there seems to have assembled all the worst elements of a truculent floating population, which hesitated at the commission of no outrage save through fear of a competent force present to resist them. They used dynamite on the dwelling of a hard working and trusted member of the railroad force; they surrounded and beat the employees who for a moment were left without military protection; and they surged around and vituperated against the troops, officers, and men, calling them all the vile names that a frontier and mining town vocabulary furnishes. In all these conditions the troops behaved with the forbearance and leniency which had been impressed on them by instructions oft repeated, and for their good conduct under such exasperating circumstances have received commendations from

representative citizens from all over the country, who had the misfortune to be traveling through Montana in these troublous times.

I have no doubt that if ample measures had not been taken in time to prevent it, a great destruction of railroad property, even to the effacement of the road for a considerable length of time, would have been wrought by the lawless element, whose character has been hinted at in the foregoing.

As it was not found necessary, after about the middle of July, to continue the guards on the trains east of Fort Keogh, Colonel Swaine, commanding that post, was on July 16 placed in charge of the railway-guard service west as far as Missoula, and Colonel Burt, commanding Fort Missoula, was given charge of that west of Missoula. These officers report in the most emphatic terms on the good conduct of the men and officers under them. Colonel Burt in his report says:

I wish to say that in all my military experience I have never seen detached service performed so soberly and faithfully and under such trying circumstances as that performed by the officers and men of this command during the late strike.

He adds that not a case of improper conduct on the part of the men was brought to his notice, or that of the officers under him, during the most exasperating conditions that characterized the conduct of those with whom his command had to deal.

All along the line the troops were subjected to insult in word and deed that was well calculated to bring about violence, had not the greatest forbearance and patience been exercised by the troops.

My thanks are especially due Colonels Swaine and Burt for their excellent management of the theaters of operations confided to their care, and I consider it my duty to commend, with them, the conduct of the troops throughout the trouble.

At present the situation is greatly changed for the better. Hundreds of lawless characters both east and west of Helena have, it appears, left the country. The guards on moving trains have been omitted and the guard duty on property has been reduced. I have been desirous of discontinuing this, not agreeable duty, for the troops, but the railroad authorities are reluctant to have the military guards withdrawn, anticipating malicious mischief against their men and equipments whenever it can be exercised without danger of detection.

As a reasonably continued watchfulness will assure permanent safety, I conclude that it is better to defer to the wishes of the railroad authorities, and maintain the guards for a time.

Since the foregoing was written the troops along the line of the Northern Pacific Railroad have been relieved and have joined their stations, with the exception of two companies of the Twenty-fifth Infantry at Livingston. These will return to their station, Fort Custer, on September 1, should nothing now unforeseen prevent.

In connection with the topographical sketches of the country in the vicinity of posts and generally throughout the department, referred to in the report of the acting engineer officer, it occurred to me that it would be well to make photographs of the posts in the department, as a means of conveying to interested parties who can not visit them an idea of the posts themselves and of the country near them. Lieutenant Hale, aide-de-camp, and acting engineer officer, was charged with making the photographs, and deserves great credit for the excellent manner in which he has handled the work. It was necessary for Lieutenant Hale to first master enough of the art of photography to make and develop pictures. This he did with instruments obtained from the Engineer Office in Washington, making his trial pictures and developing

them at these headquarters. Then he visited the posts in the early spring and made the pictures before the foliage had sufficiently put forth to interfere with the view. After this, by authority of the Secretary of War, the photogravures found in this report were produced. While the pictures of the posts had to be taken at a distance to cover the entire view, which reduces the number of details and the size of the pictures very much, yet I think that coupled with the descriptions, also prepared by Lieutenant Hale, they will convey a fair deal of each locality to anyone familiar with the surroundings, from a personal inspection of any frontier post.

In the management of the lyceums, I have found it convenient and effective to have an officer of my staff in general charge. Lieutenant Sturgis, aide-de-camp, has, in addition to his other duties, had personal supervision of this matter, and has expended much time and valuable experience in perfecting the service. The report¹ on this subject is appended with that of other staff officers.¹ Special attention is invited to the recommendations made by Lieutenant Sturgis as to classes in the lyceums. They are heartily concurred in.

The reports¹ of staff officers of their several departments are printed herewith. They contain a full account of the transactions of the supply departments, and are commended to the attention of proper authority.

In connection with the labor troubles which have lately occurred attention is especially called to the necessity of a system of tactics for maneuver of machine guns. Drills in the use of these weapons have not been obligatory, because there is no known system of tactics for their use. I unite in the recommendation that a proper system of tactics be provided, so that drills may be ordered.

During the year the following changes have taken place in the department staff: Lieut. Col. Merritt Barber, assistant-adjutant general, was relieved on October 15, 1893, by Maj. Theo. Schwan, and he in turn was relieved on December 1, 1893, by Lieut. Col. M. V. Sheridan, as adjutant-general of the department. Later (July 17, 1894), Lieut. Col. J. Ford Kent, inspector-general of the department, was relieved from duty at these headquarters, and Maj. Schwan, of the adjutant-general's department, was detailed in his place. Maj. Wirt Davis, Fifth United States Cavalry, who has performed the duties of inspector of small-arms practice in this department for the past three years, was relieved from duty by orders from the War Department, and Capt. William Gerlach, Third Infantry, chief ordnance officer of the department, was detailed by me for the position.

To Colonel Barber, Colonel Kent, and Major Davis, who have served continuously in the department during my command of it in the capacities above mentioned, my especial thanks are due for a most thorough administration of the affairs of each department over which each of these officers had control. The department staff as now organized is thoroughly efficient and eminently satisfactory to me.

Respectfully,

W. MERRITT,
Brigadier-General, Commanding Department.

The ADJUTANT-GENERAL, UNITED STATES ARMY,
Washington, D. C.

¹ Omitted.

REPORT OF BRIG. GEN. JOHN R. BROOKE.

HEADQUARTERS DEPARTMENT OF THE PLATTE,
Omaha, Nebr., August 27, 1894.

SIR: In compliance with your letter, dated July 24th, I have the honor to submit this my annual report:

The number of troops in the department has been diminished since my last annual report by a transfer of three companies of the Twenty-first Infantry to the Department of the East, and the discharge from the service of Company I, Second Infantry, and Company I, Eighth Infantry (Indians), in accordance with law and at their own request.

Changes of stations of troops are as follows: May 23, Troop F, Ninth Cavalry, from Fort Robinson, Nebr., to Fort Duchesne, Utah, Department of the Colorado. May 24, Company I, Twenty-first Infantry, from Fort Sidney, Nebr., to Fort Omaha, Nebr. June 1, Companies D, F, and G, Twenty-first Infantry, from Fort Sidney, Nebr., to Plattsburg Barracks, N. Y., Department of the East. June 8, Troop H, Ninth Cavalry, to Fort Robinson, Nebr., from Fort Duchesne, Utah. July 8, Troops A, E, G, and H, Sixth Cavalry, from Fort Niobrara, Nebr., to temporary duty at Fort Sheridan, Ill., Department of the Missouri.

Practice marches last autumn were successful at all posts where they were held. At Fort Niobrara they were dispensed with on account of there being too few officers to conduct them with success.

During May and a part of June the operation of the Union Pacific Railroad, now under control of the United States courts, was interrupted by the action of certain irresponsible bodies calling themselves "industrial armies," and during the months of July and August the transcontinental roads and branches were seriously interfered with by strikers. In both cases the United States troops were successfully used to restore order and open the roads to traffic. This will form the subject of a special report.

The Indians throughout the department have been quiet and peaceable.

Instruction in military signaling has been held in compliance with Army Regulations, and classes at each post have been pronounced proficient.

Rifle, carbine, and pistol practice has been interrupted somewhat this year owing to the disturbances on the railroads, but is being completed, and the reports, together with that of the annual competitions, will form the subject of a special report.

The post exchange has added another year to its successful experience, but I will have some suggestions to make later regarding its future conduct, which can not be so well treated of in this report.

I wish to renew my recommendation of last year, that the authority of company and other commanders should be further augmented by authority of law so that minor disciplinary measures might be legally put in their hands.

The inspection of posts in this department is now in progress and reports will be forwarded in due season.

The instruction in military duty and schools for the enlisted men has progressed satisfactorily at all posts.

Attention is invited to the accompanying synopsis¹ of the reports as to the officers' lyceum which was continued throughout the prescribed season during the past year.

I would invite attention to the accompanying reports¹ of the staff officers of these headquarters, in which the details of the operations during the year are portrayed.

I wish to acknowledge the zeal and ability displayed by the officers attached to these headquarters, which demand and receive an expression of my appreciation.

Very respectfully, your obedient servant,

JOHN R. BROOKE,
Brigadier-General, Commanding.

The ADJUTANT-GENERAL UNITED STATES ARMY,
Washington, D. C.

REPORT OF BRIG. GEN. A. M'D. M'COOK.

HEADQUARTERS DEPARTMENT OF THE COLORADO,
Denver, Colo., September 1, 1894.

SIR: I have the honor to submit the annual report of the Department of the Colorado for the year 1893-94. This department was established by direction of the President, in General Orders No. 54, Headquarters of the Army, Adjutant-General's Office, Washington, July 1, 1893, to consist of the State of Colorado and the Territories of Utah, Arizona, and New Mexico, with headquarters at Denver, Colo. It has an area of 424,495 square miles, including 33,863 square miles of Indian reservations, and contains a population of 822,026 whites and 40,784 Indians. There are 13 military posts in the department, Fort Apache, Fort Bowie, Fort Grant, Fort Hauchuca, San Carlos, and Whipple Barracks, in Arizona; Fort Bayard, Fort Marcy, Fort Stanton, and Fort Wingate, in New Mexico; Fort DuChesne and Fort Douglas in Utah, and Fort Logan in Colorado.

The condition of affairs existing in the State of Colorado, from the arrival of the headquarters of the department in Denver, July 14, 1893, to the present time, displays the wisdom of the authorities in the War Department in having moved headquarters from Los Angeles, Cal., to this place. On the afternoon of March 15, 1894, serious disorder was threatened by the assembling under arms of the local State troops in the vicinity of the city hall, to be employed by order of the governor against the sheriff of the county, the city police force, and several hundred deputy sheriffs, who had taken possession of the city hall and provided themselves with arms, ammunition and dynamite, in resistance to an effort made by the governor to seat two newly appointed members of the fire and police board of the city of Denver. Whether or not such an emergency existed as to warrant the governor, under the constitution and laws of the State, in calling out the National Guard; whether military force was resorted to by him simply for the purpose of ousting the old board and seating the new, or whether the executive power was not entirely exhausted in the act of appointment, leaving to the courts the duty of seating the new appointees, I did not feel called upon to consider.

¹ Omitted.

It became apparent to me, on the afternoon of March 15, from personal observation of the bitter hostility of the contending factions, from the assembling of the troops by the governor, the preparation of arms and dynamite by the opposing parties, and from the grave apprehension frequently expressed to me by representative professional and business men, that a collision was imminent at the city hall, and that the first shot would be the signal for a bloody riot to begin. These apprehensions were heightened by the recent experience of the city in the Arata affair, the details of which may be here referred to. A few days after my arrival in Denver, in July last, a resident of the city by the name of Arata was arrested and confined in the county jail upon the charge of murder. A few hours later an immense mob, numbering some ten thousand of the worst elements then present in the city, assembled about the jail, overpowered and intimidated the officers, battered down the doors with sledge hammers and crowbars, and dragged the prisoner into the street. He was hurried to a tree near by, his clothes being nearly torn off him by the infuriated mob, and hanged. As soon as the body was drawn above the heads of the crowd, it was riddled with bullets. The lifeless body was then taken down, the rope still about the neck, and dragged by the rabble through the principal streets with every mark of indignity and outrage. The fury of the mob having finally spent itself, the body was again hanged to a telephone pole on one of the most conspicuous places in the city. Throughout the whole affair the police seemed to be paralyzed and entirely unable to cope with the mob, and the city was filled with the most serious alarm.

The following day the presidents of three national banks that are United States depositories called upon me to report that they had information, which they deemed reliable, that the following night an attempt would be made to break into and loot their banks. I notified these gentlemen that I would inform myself if such conditions existed and would be ready to protect the United States property in the city of Denver, including the money, amounting to about \$350,000, deposited by the Government in these banks.

The troops at Fort Logan were held in readiness and transportation prepared to bring them to the city in the performance of this duty, if found necessary. When, therefore, the difficulty between the governor and the police board arose and was brought to a crisis by the governor's order calling out the National Guard, it was very apparent, from the extreme tension of public feeling, that a single shot would have precipitated an attack on the governor's person and a repetition of scenes even more disgraceful than the Arata tragedy. In view of this state of feeling, the experience of the city in the Arata affair and the unfortunate industrial depression and distress which prevailed during the past winter, coupled with the fact that the entire police force of the city was withdrawn from its legitimate duty and assembled around about the city hall, I felt satisfied that an open rupture would be followed by the looting and burning of the business portion of the city, in which are located the United States mint, the Federal building, and the several depositories of Government funds.

After the National Guard had taken position in front of the city hall, where a throng of several thousand people, including the most abandoned and reckless element of the populace, had congregated, committees of citizens from the Chamber of Commerce passed to and fro between the sheriff's party and the governor, striving to secure a suspension of hostilities and to gain time for cooler counsels to prevail; but both sides were inflexible, and the governor's order was given that if the city

hall did not surrender in thirty minutes the troops were to open with infantry and artillery fire. It was at this critical juncture that, at about 5.20 p. m., I received the following letter from the governor of Colorado, Davis H. Waite:

STATE OF COLORADO, EXECUTIVE CHAMBER,
Denver, March 15, 5.20 p. m.

I have called out the militia in Denver (National Guard) to enforce the laws of the State. I find an organized opposition by the city police and detective force and the sheriff's office. I can enforce the laws, but not without great bloodshed. I call upon you, as governor of the State, to assist me in preserving order and in preventing bloodshed.

DAVIS H. WAITE,
Governor of Colorado.

General McCook, *United States Army.*

Perceiving that the property of the United States here located was now in serious jeopardy, the mint and Federal building being but a few blocks from the city hall, and that troops could not reach the city in time to render effective aid after a riot or a fire had once begun, I sent the following telegraphic order to the commanding officer, Fort Logan:

DENVER, COLO, March 15, 1894.

The department commander directs that you report here with five companies of your command, with 100 rounds of ammunition per man and rations for twenty-four hours. Special train will leave at once for your post. Upon arrival here report in person to department commander at headquarters. Hold troops at depot.

THOMAS WARD,
Assistant Adjutant-General.

The COMMANDING OFFICER, *Fort Logan, Colo.*

The following reply was also sent to Governor Waite:

HEADQUARTERS DEPARTMENT OF THE COLORADO,
Denver, Colo., March 15, 1894.

In pursuance of your demand, this moment received, I have ordered the troops from Fort Logan to come at once to the city, for the sole purpose of preserving peace. I act in the matter under paragraph 585, Army Regulations. I consider a crisis imminent, and insurrection and riot against the executive authority of the State of Colorado. The troops, upon arrival, will be directed to act with great discretion, and I will see that the laws of the land are not violated. I would recommend that an order issue that the National Guard be returned to their armory.

A. MCD. MCCOOK,
Brigadier-General, Commanding.

DAVIS H. WAITE,
Governor of Colorado, Denver, Colo.

The following is the answer received from the governor:

STATE OF COLORADO, EXECUTIVE MANSION,
Denver, Colo., March 15, 1894.

Yours by your aid-de-camp received. I respectfully decline to order the National Guard, now endeavoring to enforce the laws of the State, to their armory, but will confer with you or Colonel Merriam, whom shall be in command when the troops arrive.

Respectfully,

DAVIS H. WAITE, Governor.

General McCook.

At 7.30 p. m., accompanied by my aid-de-camp, First Lieut. O. B. Baker, Seventh Infantry, I called upon Governor Waite at his quarters. I found in front of the house a detachment of the National Guard. Being admitted to the presence of the governor, I at once proceeded to explain to him what authority I had under the law for the use of the United States troops, what I could do and what I could not do. He

asked me to assist him in taking possession of the city hall. I told him I could not do so. He then asked me if I could not hold my troops in reserve for the National Guard to fall back upon in case they were repulsed. I replied that United States troops could not be used for such a purpose. During the conversation the governor stated that he had received several letters that day threatening his life, and that he feared assassination, and, to prevent it, he had placed a detail from the National Guard in front of his quarters, where they would remain during the night. I took leave of the governor with the understanding that he would call at my headquarters at 8.30 the following day. I then returned to my office to await the arrival of Colonel Merriam, Seventh Infantry, who had been ordered to report to me in person. He arrived with five companies of the Seventh Infantry at the railroad depot at 8.30 p. m., and was directed to hold his troops there subject to my orders.

As soon as it became known that the troops from Fort Logan had been ordered to the city the effect of such action was immediate and salutary. The crowds of people about the city hall dispersed, and in a few moments later the National Guard returned to their armory, and peace and quiet were restored to the city.

The following morning, March 16, at 8.30 o'clock, I repaired to my headquarters and found the governor there together with Colonel Merriam, who had reported for further orders. I carefully explained to Governor Waite that under the law United States troops could be used only for the protection of Government property and for the preservation of peace, provided a crisis was imminent. He then remarked that he did not ask for the troops for any such purpose, and made a request of me to withdraw the troops. I asked the governor to please put that request in writing, and in a few moments thereafter I received the following communication from him:

STATE OF COLORADO, EXECUTIVE DEPARTMENT,
Denver, March 16, 1894.

Yesterday, about 5 p. m., on informal notice that you had announced that you would put seven companies of United States troops in Denver at my call, I inferred that your object was to assist the State in the enforcement of the laws. As you were present in Denver and knew that the city companies of the National Guard had been called out by me as commander in chief, and were at the time on duty in the streets near the city hall, I therefore requested that you move the United States troops to the city, and I was careful to specify in my letter that the object of the call for the United States troops was that they might assist the State troops in the execution of the laws and in preventing bloodshed. In conversation with you this morning, at your office, I find that, in your opinion, you have no such right. I therefore, most respectfully withdraw my request for the United States troops.

DAVIS H. WAITE,
Governor of Colorado.

A. McD. McCook,
*Brigadier-General, United States Army,
Department of the Colorado.*

Attention is respectfully called to Governor Waite's communication of March 15, in which he requested that the troops at Fort Logan be brought to the city of Denver, and in which he uses the following language: "I call upon you, as governor of the State, to assist me in preserving order and preventing bloodshed." The expression "the execution of the laws" nowhere appears in that communication and it is difficult to understand why the governor of the State of Colorado should send the communication of March 16, in which he distinctly states that the object of the call for troops was that they might "assist

hall did not surrender in thirty minutes the troops were to open with infantry and artillery fire. It was at this critical juncture that, at about 5.20 p. m., I received the following letter from the governor of Colorado, Davis H. Waite:

STATE OF COLORADO, EXECUTIVE CHAMBER,
Denver, March 15, 5.20 p. m.

I have called out the militia in Denver (National Guard) to enforce the laws of the State. I find an organized opposition by the city police and detective force and the sheriff's office. I can enforce the laws, but not without great bloodshed. I call upon you, as governor of the State, to assist me in preserving order and in preventing bloodshed.

DAVIS H. WAITE,
Governor of Colorado.

General McCook, *United States Army.*

Perceiving that the property of the United States here located was now in serious jeopardy, the mint and Federal building being but a few blocks from the city hall, and that troops could not reach the city in time to render effective aid after a riot or a fire had once begun, I sent the following telegraphic order to the commanding officer, Fort Logan:

DENVER, COLO, March 15, 1894.

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THOMAS WARD,
Assistant Adjutant-General.

The COMMANDING OFFICER, *Fort Logan, Colo.*

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A. MCD. MCCOOK,
Brigadier-General, Commanding.

DAVIS H. WAITE,
Governor of Colorado, Denver, Colo.

The following is the answer received from the governor:

STATE OF COLORADO, EXECUTIVE MANSION,
Denver, Colo., March 15, 1894.

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Respectfully,

DAVIS H. WAITE, Governor.

General McCook.

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STATE OF COLORADO, EXECUTIVE DEPARTMENT,
Denver, March 16, 1894.

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DAVIS H. WAITE,
Governor of Colorado.

A. McD. McCook,
*Brigadier-General, United States Army,
Department of the Colorado.*

Attention is respectfully called to Governor Waite's communication of March 15, in which he requested that the troops at Fort Logan be brought to the city of Denver, and in which he uses the following language: "I call upon you, as governor of the State, to assist me in preserving order and preventing bloodshed." The expression "the execution of the laws" nowhere appears in that communication and it is difficult to understand why the governor of the State of Colorado should send the communication of March 16, in which he distinctly states that the object of the call for troops was that they might "assist

the State troops in the execution of the laws." Furthermore, in this letter of March 16 Governor Waite refers to an "informal notice" received by him that I would put seven companies of United States troops in Denver at his call. In this connection it is perhaps needless to say that Governor Waite received no such notice from me or from any person authorized to speak for me.

The day following their arrival the troops were more comfortably quartered in a building in the city. The difficulty between the governor and the police board having been removed from the streets to the supreme court of the State, and, in my opinion, there being no further need for the presence of the troops in the city, on Sunday, March 18, they were returned to their station at Fort Logan. Throughout their stay here the conduct of officers and men was exemplary, and I am confirmed in my belief that but for their timely arrival the Government would have suffered serious loss.

On the evening of March 15, committees from the Board of Trade and the Chamber of Commerce and many other citizens interested in the preservation of order called upon me at my headquarters to express their thanks for the prompt action taken in bringing the troops to Denver. They stated that it gave security to life and property, and restored the confidence of the people, and, in order to give expression to the situation of affairs in Denver on March 16, a copy of the following telegram was furnished for my information:

Hon. Henry M. Teller and Hon. Edward O. Wolcott, United States Senators; Hon. Lafe Pence, Hon. John C. Bell, House of Representatives, Washington, D. C.

The situation here is this: Messrs. Orr and Martin had been for months members of the fire and police board of this city. The governor assumed to remove them. They alleged the removal was unlawful. Threats of forcible dispossession having been made by the governor, they applied to the district court and an injunction was awarded against the governor and others to restrain any forcible dispossession of these gentlemen from their offices. The court, on full argument, refused to modify the injunction. The governor, in defiance of the express mandate of the injunction, on yesterday assembled a regiment of militia, a battery of artillery, and the signal corps, surrounded the city hall and expressly ordered fire to be opened upon the said city hall unless possession was delivered to the new appointees. By the intervention of wiser counsels, what he contemplated was prevented, and the presence of United States forces, which are understood to have been called for by the governor himself, has restored peace. So long as these troops remain here there will be no further disturbance. If removed, we anticipate a renewal of the tumult of yesterday, and probably a bloody riot, as the governor has ordered all the organized militia of the State to Denver. We solicit your influence with the Administration to keep the troops here, with orders to assist the sheriff in maintaining peace until the matter can be adjusted in the courts. In the event of such a riotous state of affairs, it is almost inevitable that government property will be destroyed. Immediate action is highly important.

W. N. Byers, D. H. Moffat, W. S. Cheesman, F. P. Ernest, J. A. Cooper, George Tritch, Charles M. Clinton, R. W. Woodbury, Samuel Lesem, J. S. Appel, Alfred Butters, E. Monash, John D. McGilvray, William G. Evans, Scott J. Anthony, J. J. Joslin, Donald Fletcher, William K. Burchinell, Charles B. Kountze.

INSURRECTION OF RAILROAD EMPLOYEES.

At 12.30 p. m., on July 1, 1894, the following communication was received from Joseph A. Israel, United States marshal for the district of Colorado:

DEPARTMENT OF JUSTICE,
OFFICE OF UNITED STATES MARSHAL, DISTRICT OF COLORADO,
Denver, Colo., July 1, 1894.

SIR: The Atchison, Topeka and Santa Fe Railroad and the Union Pacific, Denver and Gulf Railroad in this district are in the hands of receivers of the circuit court of the United States for Colorado. Trinidad, Colo., is common point for both of these roads, of which the Pullman strikers now hold full possession.

Yesterday 52 deputy marshals were sent to protect railroad property at that point and insure movement of trains. Strikers have captured and disarmed all of deputy marshals and now hold them as prisoners. The strikers number about 300, and are asking the coal miners in the neighborhood to aid them.

All trains on both roads are held by the strikers at Trinidad. They have torn up and destroyed the orders of the court posted at that point. I am of the opinion that I can not retake the place and restore railway property to the receivers without Federal troops, and I ask for such troops at once.

I have just sent a telegram to the Attorney-General, embodying all the foregoing facts, with such request for troops, which the district judge of the United States court, Judge Hallett, signed.

JOSEPH A. ISRAEL,
United States Marshal.

Gen. A. McD. McCook,
Brigadier-General, United States Army.

Upon receipt of the above, the following telegraphic order was sent to the commanding officer, Fort Logan:

The department commander directs that you have five companies in readiness to move on Trinidad by rail.

THOMAS WARD,
Assistant Adjutant-General.

COMMANDING OFFICER, *Fort Logan, Colo.*

At 11.30 p. m. of the same day the following dispatch was received from the War Department, dated Washington, D. C., July 1:

By direction of the President, you will send at once a sufficient force from Fort Logan to Trinidad, with orders to enforce mandates of United States courts, protect property in the hands of receivers of United States courts, and prevent obstruction to the use of said property and the transmission of United States mails.

J. M. SCHOFIELD,
Major-General, Commanding.

General McCook,
Commanding Department of the Colorado, Denver, Colo.

At 5 a. m., July 2, 5 companies, Seventh United States Infantry, under command of Maj. Charles C. Hood, left Fort Logan by rail. Upon the train were loyal expert telegraphers and linemen for the repair of the telegraph lines that had been cut between Pueblo and El Moro, Colo. At 10 a. m. the train reached Pueblo, where Major Hood found that all trains, mail, passenger, and freight, were delayed and not permitted to move by the insurgents. At 3.20 p. m. he reached the point where the wires of all lines were cut and partially destroyed. After repairing the lines, the command reached Trinidad at 5.10 p. m. The arrival of the troops was a complete surprise to the malcontents. The depots, grounds, and yards of the railroads in the hands of receivers of the United States courts were cleared of the mob, and the troops went into camp in close proximity to this property. Everything remained quiet until about midnight, July 2, when an incendiary fire was discovered in a lumber yard near the depot, started with the evident intention of burning the depot and the train belonging to the Denver and Rio Grande Railroad that had brought the troops from Fort Logan; also, a large number of cars belonging to the Union Pacific, Denver and Gulf Railroad, which were side-tracked at that point. Lieut. James A. Goodin, Seventh Infantry, in command of Company C of that regiment, being in the vicinity, rushed to the fire with his command, but was unable to quench it for lack of water. He then turned his attention to the saving of the depot and troop train, and, after performing this duty, with the aid of the company he pushed out of danger a large number of cars belonging to the Union Pacific, Denver and Gulf Railroad, thereby saving property to the value of \$20,000. Six cars loaded with merchandise were burned.

About 12 m., July 4, under the protection of the troops, United States deputy marshals arrested 48 ringleaders of the insurrectionists, who had assembled with others in a large meeting in their hall, making incendiary speeches. The prisoners were placed upon a train under guard of Lieut. George S. Young, Seventh Infantry, and 25 enlisted men and 12 United States deputy marshals, and brought to Denver, where they were placed in the county jail. In addition to the above, 12 of the insurrectionists were arrested at Pueblo and confined in the jail at Denver. It is believed that these prompt arrests had a most salutary effect upon the lawless element at Trinidad, Pueblo, and the southern and central portions of the State of Colorado. The Union Pacific, Denver and Gulf commenced regularly operating their road on July 11, and have continued to do so without interruption. The Santa Fe Railroad began moving trains from La Junta July 6. Both roads were open before these dates, but crews to operate trains could not be obtained.

Trinidad is situated near the southern foothills of the Raton range of mountains, which lie between it and the town of Raton, in Colfax County, N. Mex. At the summit of these mountains there is a tunnel over one-half mile long. As all communication between Trinidad and Raton, a distance of 33 miles, had been interrupted, and knowing that several trains were delayed by violence at the latter point, it was evident that the quickest and most efficacious way to open communication through there was to bring troops from Santa Fe, N. Mex., the nearest military station south of the Raton Mountains.

Colonel Pearson, Tenth Infantry, reached Raton at 6.30 p. m., July 4, with two companies of his regiment from Fort Marcy. He was delayed en route by the engineer and fireman deserting his train at Las Vegas. Affairs at Trinidad having quieted down enabled me to order Major Hood to send one company of his command to guard the Raton tunnel. Threats had been made that this portion of the road was to be destroyed by dynamite.

On reaching Raton, Colonel Pearson cleared the railroad depot, yards, and property, of all the turbulent elements, and since then there have been no hostile demonstrations at that point. The troops were sent to Raton upon telegraphic orders from the Major-General Commanding the Army, directing that, after the trouble at Trinidad had been settled, troops be dispatched to Raton to perform the same duties there, and upon information contained in the following telegram, received July 2:

RATON, N. MEX., *July 2, 1894.*

Two hundred United States troops are needed here at once to protect United States mail trains and persons running them. Please send them, if possible, at once.

HALL, *United States Marshal.*

General McCook, *Denver, Colo.*

Being cut off from railroad communication with the troops in the southern portion of the department and those at Fort Douglas, Utah, and there being a crisis in the railroad troubles at Pueblo, I asked authority from the War Department to send two companies of the Seventeenth Infantry, on duty at Fort D. A. Russell, to Pueblo. They arrived most opportunely on the night of July 3, and remained in camp there until August 4, when they were returned to their station.

Believing that Denver would soon be another point of disturbance, I deemed it necessary to bring six companies of the Twenty-fourth Infantry, under Col. Z. R. Bliss, from Forts Bayard and Huachuca, one company to be stationed at Raton, one at the Raton tunnel, and the

other four to relieve the companies of the Seventh Infantry at Trinidad, in order that I could restore to Fort Logan its garrison, to be held in hand to put down any turbulence caused by lawless men in and about Denver, and to protect the property of the Union Pacific, Union Pacific and Gulf, and the Santa Fe Railroads which center at this point.

One company was accordingly stationed at Raton, to assist the command of Colouel Pearson in their duties there, one relieved Captain Jackson's company of the Seventh Infantry at the Raton tunnel, and the four remaining companies relieved Major Hood's command at Trinidad. The five companies of the Seventh Infantry then returned to Fort Logan. These movements took place on July 11.

On July 5 the following telegram was received:

RATON, N. MEX., *July 5, 1894.*

There is a large number of strikers at Las Vegas, who are determined not to allow trains to pass. Please order troops to that point.

E. L. HALL, *United States Marshal.*

General McCook, *Denver, Colo.*

Las Vegas being a division point and a place of importance, I ordered one company of infantry and 50 dismounted cavalrymen from Fort Wingate to proceed at once to Las Vegas with the necessary instructions in the case. They arrived there at 4 p. m., July 7. To further carry out the spirit of the instructions of the Major-General Commanding the Army, a detachment was sent to Los Cerrillos, N. Mex., where striking miners were indulging their lawlessness by firing into trains passing that point. On the Atlantic and Pacific Railroad, United States Marshal Meade, of Arizona, reported to me that it was impossible to execute the mandates of the United States court for the district of Arizona by the usual methods, and called upon me to furnish troops at Winslow, Williams, and Peach Springs on the above mentioned railroad. These points are division stations, at all of which were large numbers of insurgents who had left the service of the railroad and were threatening the men who were hired to take their places. They had burned bridges, removed fish plates from the rails, and obstructed the road by rolling large bowlders upon the track. Three companies of the Eleventh Infantry, from Whipple Barracks, were dispatched at once, one to take station at Winslow, one at Williams, and one at Peach Springs. These troops were returned to their station August 3.

On July 7 a telegraphic order from the Headquarters of the Army directed me to send troops to Grand Junction, Colo. The order was executed at once. Two companies of the Sixteenth Infantry reached Grand Junction at 6 p. m., July 9, immediately taking possession of all railroad property in that vicinity in the hands of a receiver of the United States courts. On July 9, Captain Brush's company of the seventeenth Infantry was ordered to open the Denver and Rio Grande Railroad, on which all mail trains were blocked at Salida, and to proceed as far west as Grand Junction. Captain Brush reached the latter point on July 10, and returned to Colorado Springs via the Midland road, a part of the Santa Fe system. Violence had been offered to the passage of coal trains at New Castle, and portions of the track had been blown up near Glenwood Springs. The company then returned to Pueblo. On July 10, it having been reported that striking miners were interfering with the traffic of coal trains on the Midland Railroad at New Castle, I directed one company from Grand Junction to proceed to New Castle, near where the mines are located, and where a

large railroad bridge crosses the Grand River. Since the arrival of the troops there, peace and quiet have prevailed.

In the performance of the various duties imposed upon the troops of the department during the strike, there has been no insulting or disrespectful language used toward them by the insurgents, so far as reported to these headquarters. As soon as the troops can be withdrawn with safety from Trinidad, Raton, Las Vegas, and New Castle, they will be returned to their respective stations; but, owing to the large number of men discharged from the Santa Fe system, I do not think that it will be prudent to relieve the troops from this duty for some time to come.

INDIAN DEPREDACTIONS.

On January 31, 1894, two Indians, a woman and a man, were seen lurking around Emerson's ranch, near Monument, Ariz. Mr. Emerson was absent at the time, and a neighbor, Mr. Clark, who owns a ranche near by, saw these Indians approaching a herd of Emerson's horses, grazing on the mountain side. Clark fired at the Indians and they disappeared over the ridge. Early in the evening they appeared again, and Clark, seeing their forms outlined against the darkness, fired two shots at them, wounding the squaw through both legs just above the knee. At the time of firing, the buck was driving a horse in front of him up the hill. He returned Clark's fire and then disappeared. The affair having been reported to the commanding officers at Fort Grant and San Carlos, troops were sent out to investigate it. Lieutenant Furlong, First Cavalry, reached the ground February 3, and was conducted by Mr. Clark to where the squaw was shot. This is the only depredation that has been traced to the Apaches since my last official report. Roundups and counts were made of all the Indians on the San Carlos Reservation, and none were found absent. It is supposed that these Indians belong to a party of Apaches living off the reservation on the San Carlos and Gila rivers.

On the night of March 17, 1894, William Smith, a storekeeper living near Defiance station, on the Atlantic and Pacific Railroad in New Mexico, was murdered and his body brutally mutilated by Navajo Indians. On the 25th Lieutenant Plummer, the agent of the Navajoes, was notified that Pinto, a head man of the tribe in that vicinity, had arrested the murderers and wanted him to come and take them into custody. On notification by Lieutenant Plummer that Pinto's life had been threatened, a detachment of troops from Fort Wingate was sent at once to Pinto's ranch to protect him and to save the prisoners from lynching on their arrival in Gallup. The Indians were bound over to await the action of the grand jury, and sent to Albuquerque, where they were placed in jail.

On June 16, 1894, troops A and D, Second Cavalry, under command of Captain McClernand, of that regiment, left Fort Wingate for American Valley, Arizona, to arrest certain Navajo Indians who, it was claimed, had been annoying settlers by killing and stealing cattle. These Indians were to be designated by their agent, Lieutenant Plummer, who accompanied the command. Ten prisoners were captured and brought to Fort Wingate, where they were placed in the guard-house until their cases could be properly investigated by the civil authorities. The result of their trial by civil process has not been reported to these headquarters.

Maj. James F. Randlett, Ninth Cavalry, agent at the Uintah and Ouray agencies, White Rocks, Utah, reports that great annoyance

results from people who have settled on the strip of land cut from the reservation and established whisky shops thereon. They sell and trade whisky to the Indians, and carry on their illicit business to such an extent as to cause him great anxiety. He seems to receive no assistance from the civil authorities in suppressing the traffic. In all other respects peace has been maintained at these agencies.

There are no reports of depredations by the Mescalero Apaches near Fort Stanton, N. Mex., or from the Jicarilla Apaches near Tierra Amarilla. So far as the Indian affairs are concerned, in contrast with the troubles of past years, the condition of things in the department may be regarded as entirely satisfactory.

INDIAN TROOPS.

There is one Indian troop remaining in service in the department—Troop L, Second Cavalry, recruited from the Navajoes. Under instructions from the Secretary of War and Major-General Commanding the Army, Companies I, Sixteenth Infantry, and I, Eleventh Infantry (Indian), will be skeletonized upon the discharge of the enlisted men at the expiration of their furloughs. Company I, Ninth Infantry (Indian), arrived at Fort Grant, Ariz., on July 10, 1894, from Fort McPherson, Ga., and were discharged by instruction of the Secretary of War. They were furnished a military escort to San Carlos, their place of enlistment.

MILITARY POSTS.

I would respectfully report that the post of Fort Bowie, Ariz., has ceased to be of military importance in this department, and I would recommend that steps be taken to abandon it and to transfer the two troops of the Second Cavalry, stationed there, to Fort Logan, Colo. If there be any objection to the movement on account of the expense of railroad transportation, I would recommend that the two troops be permitted to march the 716 miles from their post to Fort Logan. The march could be made in forty days, forage being placed en route at the railway stations, and the heavy baggage transported by rail.

If the two companies of the Seventh Infantry now serving outside the department can not be ordered for duty at Fort Logan—a measure which I earnestly recommend—I would respectfully suggest that the post at Fort Stanton, N. Mex., be broken up and that the two companies of the Tenth Infantry on duty there be sent to Fort Logan for station. Fort Stanton, in my opinion, has outlived its usefulness, and can be abandoned without detriment to the settlers in that vicinity. There is now sufficient population in Lincoln County, N. Mex., to take care of themselves. The post is over 100 miles from the railroad and is an expensive one to maintain. Moreover, I deem it absolutely necessary that the garrison of Fort Logan be increased by two troops of cavalry and two companies of infantry, on account of the condition of unrest now existing in the State of Colorado. Judging the future by what has occurred in the past and what exists to-day, and considering the late insurrection of railroad employees, I deem this addition to the garrison at Fort Logan a great necessity. There are quarters for officers and men, and stables for two troops of cavalry at Fort Logan, and there have been recently completed two fine sets of barracks for two companies of infantry, which can be occupied without additional expense to the Government. I would recommend that the other posts in the department remain as they are and that no changes be made in their garrisons.

POST EXCHANGE.

The post exchanges, conducted as they are now, are growing in improved administration and usefulness to the troops at the different posts.

THE LYCEUMS.

The lyceums have been conducted in accordance with the provisions of General Orders, No. 80, Adjutant-General's Office, series 1891, at all posts in the department except San Carlos, which has been excepted from the requirements owing to the transitory nature of its garrison, the troops of this garrison being changed once each year.

Essays on timely and interesting topics were written and submitted to the department commander by all line officers, the field officers acting as instructors. The preparation and reading of essays by the latter was left optional, and none were submitted by them except in the case of Col. Z. R. Bliss, Twenty-fourth Infantry, commanding Fort Bayard, N. Mex.

The period during which the lyceums were in session extended from October 1 to March 31, as directed by General Orders, No. 33, series 1891, from these headquarters.

The following are the subjects taken up and the posts at which they were entered upon: Manual of Guard Duty, Forts Apache, Logan, and Stanton; Fire Discipline (Batchelor), Forts Apache, Huachuca, Logan, and Marcy; Security and Information (Wagner), Forts Apache, Bayard, DuChesne, Grant, Huachuca, Logan, Marcy, Stanton, and Wingate; Military Law, Forts Apache, Logan, Marcy, and Stanton; Drill Regulations, Forts Bayard, Douglas, Duchesne, Marcy, Stanton, and Wingate; General Orders, No. 100, Adjutant-General's Office, 1863, Forts Bayard and Huachuca; General Orders, No. 80, Adjutant-General's Office, 1891, Fort Douglas; Field Engineering, Forts Bayard, Bowie, and Grant; Minor Tactics, Forts Bowie, Douglas, Logan, and Whipple; Cavalry, Forts Douglas and Grant; Hipology, Fort DuChesne; Field Equipments, Fort Douglas; Troops in Campaign, Forts Douglas, Huachuca, Logan, and Marcy; Target Practice, Fort Douglas; Explosives, Fort Douglas; Horse and Stables, Fort Grant.

REMARKS AND RECOMMENDATIONS MADE BY SUPERINTENDENTS OF LYCEUMS.

Maj. Henry Carroll, First Cavalry, Fort Apache, Ariz.: The officers have shown a commendable interest in the lyceum, and I believe it has been a success. The constant changing of officers at this post renders it difficult to keep up classes.

Col. Z. R. Bliss, Twenty-fourth Infantry, Fort Bayard, N. Mex.: Renews recommendations of last year, viz: That the writing of essays by field officers should be optional. Those who like to write and have anything to impart will be glad to read essays. To those who neither like to write nor have anything valuable to impart, it is disagreeable and productive of no good. Their habits are pretty well formed, and it is hard and perhaps unwise to attempt to change them.

Col. E. P. Pearson, Tenth Infantry, Fort Marcy, N. Mex.: Has no reason to change his opinion of the lyceum as expressed in report of last year, viz, that it is a success, inasmuch as it induces officers to read and study upon the profession of arms.

Col. G. G. Hunt, Second Cavalry, Fort Wingate, N. Mex.: The lyceum has very noticeably proven of benefit to all concerned.

Col. M. M. Blunt, Sixteenth Infantry, Fort Douglas, Utah: I think the lyceum has been conducted with improvement to the officers.

Lieut. Col. D. D. Van Valzah, Twenty-fourth Infantry, Fort Huachuca, Ariz.: Commendable interest was displayed in the course of study and in the preparation of essays, and each subject was discussed, by all officers present after its reading.

Maj. Thomas McGregor, Second Cavalry, Fort Bowie, Ariz.: The lessons recited were fully discussed, with profit to all concerned.

Capt. E. D. Dimmick, Ninth Cavalry, Fort Duchesne, Utah: All due interest was displayed by the members, and the progress was excellent.

DISCIPLINE.

Discipline throughout the department has been good. But one commissioned officer has been brought to trial by court-martial during the past year.

TARGET PRACTICE.

The trouble upon the railroads has interfered with the target season, and reports can not be made upon that subject until the target practice is completed.

DESECTIONS.

The report¹ of the judge-advocate of the department shows a slight falling off in desertions during the year, the total number being 94 or 2.69 per cent of the average enlisted strength of the command. The evidence adduced before courts-martial and the reports of boards of survey indicate that this grave crime is often committed without reflection, or upon the most frivolous pretexts, and with little or no appreciation of its enormity. The annual exodus of several hundred men from our honorable service by this disgraceful method, and the comparatively feeble efforts of the civil authorities to apprehend and return them to military custody for trial, suggest a perverted, if not, indeed, unpatriotic sentiment upon this grave question among the people from among whom our Army is recruited. This low popular estimate of military crimes, coupled with the humane sentiment of the age, has induced a continuous and progressive relaxation during the last century in the severity with which the crime of desertion has been punished until, indeed, it may now be believed that the deterrent punitive effect has practically disappeared. This suggests the importance of enhancing the dignity of the enlistment contract and of providing additional inducements to continuous honorable service by such legislation as will secure, to every soldier of ten or twelve years' faithful service, preferment in all appointments in the Government civil service. Such a guarantee would draw to the ranks a desirable class of men, secure excellent material for the noncommissioned personnel and tend to restore to the crime of desertion the odium which it so justly deserves. This system has been adopted in several European countries, and apparently with marked success.

MILITARY CONVICTS..

I would also invite attention in this connection to the recommendation of the judge-advocate with reference to extending the provisions of section 1361, Revised Statutes, to convicts serving at posts. These men take advantage of their immunity from trial to corrupt and demoralize garrison prisoners with whom they are necessarily brought into daily contact. All infractions of discipline should be visited with even-handed justice, regardless of the particular status of the offender.

DRILL AND INSTRUCTION.

Drill and instruction have been faithfully carried out throughout the department. The concentration of the cavalry serving in Arizona and New Mexico at Fort Grant, in November last, forming there a regimental camp of instruction, was very instructive to all participating in it.

¹ Omitted.

EDUCATION.

The education of the enlisted men has been faithfully carried out at all the military posts.

During the past year the department staff have performed their duties efficiently and to my entire satisfaction. My personal staff have attended to their duty with industry and intelligence.

Very respectfully, your obedient servant,

A. McD. McCook,
Brigadier-General, Commanding.

The ADJUTANT-GENERAL OF THE ARMY,
Washington, D. C.

REPORT OF BRIG. GEN. FRANK WHEATON.

HEADQUARTERS DEPARTMENT OF TEXAS,
San Antonio, Tex., August 24, 1894.

GENERAL: I have the honor to submit for the information of the Major-General Commanding the Army the following annual report of military operations and affairs in the Department of Texas.

I am glad to be able to state that since the date of my last annual report, few attempted violations of our neutrality laws have been brought to my notice, and our Rio Grande border, so frequently and for so many years the scene of turbulence and disorder, has during the past twelve months been unusually quiet, and the troops have rarely been ordered from their posts to prevent violations of law upon our Mexican border.

I must renew former recommendations for the establishment of permanent and larger posts on our Mexican boundary frontier.

I believe the presence of a regular force there will always be a necessity, and that troops occupying such remote stations should be appropriately quartered.

The regiment of cavalry ordered from this department in 1888 has never been replaced and in the sudden emergency that arose in December, 1892, at San Ygnacio, was greatly needed.

There should be a mounted force of two troops at Fort Bliss; Fort McIntosh should be appropriately located and enlarged to a garrison of four troops of cavalry and one or more companies of infantry; and for the adequate guarding of the lower Rio Grande, the Fort Brown garrison should be materially increased.

At or near Eagle Pass, opposite Porfirio Diaz, Mexico, where many hundred thousands of American capital are invested, there should be an adequate garrison of at least one company of infantry and two troops of cavalry.

The necessity of a mounted force at Fort Bliss was demonstrated in November last, when, to investigate promptly reports that armed bandits were threatening to cross the Rio Grande into Mexico, near San Elizario, I was compelled to move infantry in wagons, at night, to the point reported as menaced.

It is an error to suppose that our Rio Grande border can be properly guarded by locating troops elsewhere, and hurrying them to a threatened point when an emergency arises; the troops should be on the border, actually on the spot, where possibly their presence may prevent

uprisings being attempted; an adequate reserved force should of course be maintained at Forts Sam Houston and Clark.

On August 30, 1893, Major Keyes, commanding Fort Ringgold, reported the sheriff of Hidalgo County had informed him that just below Havana, about 30 miles from the post, a party of armed men under a custom-house official, from Reynosa, Mexico, had crossed from Mexico and seized a flock of about 3,000 sheep belonging to a man named Thomas Salinas, a citizen of Texas, on the ground that the sheep were grazing on a piece of land claimed by parties on both sides of the Rio Grande. Troops were sent to the spot from Fort Ringgold, and the matter was satisfactorily settled by the commanding officer without collision.

The discipline of the troops serving in this department, as observed by myself and reported by the inspector-general of the department, is very satisfactory; military training, as prescribed by orders and regulations, has been systematically conducted; in consequence of which the various organizations of the command have maintained, during the year, a high standard of efficiency. Perceptible evidence of the fine appearance of the troops, at several posts, was presented to the Secretary of War during his visit to Texas in the early part of April last. In this connection it affords me great satisfaction to state that the excellent condition of the personnel observed by the Secretary at the posts inspected prevails uniformly throughout the department.

No commissioned officer has been arrested or brought to trial during the year, and infractions of discipline among noncommissioned officers and privates have been relatively few and mainly for minor offenses. The percentage of trials by general courts-martial is less than during the previous year, and many such trials were of men serving elsewhere and arrested within the limits of this department for offenses committed in other commands.

We are enlisting a much more intelligent and satisfactory class of recruits than ever before, and it is encouraging to observe the excellent material for soldiers our regimental recruiting officers have secured. Self-respecting young men of character are learning that they may now find in the ranks of our Army a congenial class of perfectly reputable and intelligent associates, and now that the period of enlistment has been reduced to three years, this will undoubtedly become a still more marked characteristic of the military service.

The abrogation of the law under which General Orders No. 30, current series, Adjutant-General's Office, was issued, will certainly benefit the service in many ways and secure to us the valued services of experienced noncommissioned officers, a matter of such vital importance to troop, battery, and company commanders; the law prohibiting the reenlistment of a soldier of ten years' service was a severe blow to army efficiency.

Something more can very readily be done by Congress to elevate and improve the condition of the soldier, without cost to the nation, and give him an additional incentive for the prompt and faithful performance of his duties. All noncommissioned officers can not earn the rank of commissioned officer, nor can all privates be promoted to the warrant grade, but a reward to an honorably discharged soldier of "a civil service certificate" after six or more years' service, insuring to him preference in certain grades of Government employment, would certainly benefit the public service generally, and at once greatly stimulate and improve the military arm. Such a law would speedily dispel the feeling of discontent and unrest that necessarily exists more or less in all

armies in time of peace, by securing to the faithful soldier a passport to preferment in civil-service employment, and where a discharged soldier finds no vacancy obtainable in Government employ, State, municipal, and large business establishments would certainly desire to secure the services of such trained men upon whose character and efficiency they could confidently rely.

On the 16th instant I presented to the ten successful contestants, after the department rifle competition recently concluded at Fort Clark, Tex., the handsome gold, silver, and bronze medals awarded by the War Department. I was impressed with the great beauty and value of these souvenirs, and with their size and weight. In lieu of the present costly gold medal would it not be desirable to furnish one of less weight, and with the sum thus saved present to the gold-medal winner a handsomely finished service rifle, with perhaps a telescopic attachment that could for very long ranges be readily adjusted, the rifle to be mounted in silver, suitably engraved with the owner's name, and to become the private property of the winner.

I take pleasure in inviting the Adjutant-General's attention to the accompanying remarks of the department inspector of small-arms practice concerning the use, at the recent department rifle competition, of the portable field-telephone equipment designed by Maj. C. E. Kilbourne, when a captain of the Signal Corps, and Capt. R. E. Thompson, Signal Corps. I am convinced by personal observation that this novel use of such a telephone is of infinite importance, demonstrating its practical usefulness in the field for target as well as for other military purposes. If this ingenious portable telephone can be so advantageously employed, on long or short rifle ranges, its efficiency for speedy communication with advancing lines of battle, skirmishers, or even storming columns seems fully demonstrated.

In compliance with the request of the State authorities, I, on the 16th of June, 1894, directed the commanding officer at Fort Sam Houston to send to Austin, Tex., a battalion of four companies of infantry, a squadron of two troops of cavalry, Light Battery F, Third Artillery, and the Regimental Band, Fifth Cavalry, to encamp with the State troops from July 9 to 18, the period of their encampment.

Subsequently, in view of the railroad-strike troubles, and the possible use for troops from Fort Sam Houston in connection therewith, I retained the infantry companies at their station. The other organizations, Troop A, Fifth Cavalry (Augur's); Troop H, Fifth Cavalry (Schuyler's), under Maj. Francis Moore, Fifth Cavalry, squadron commander, and Light Battery F, Third Artillery, Capt. J. B. Burbank, Third Artillery, commanding, marched to Austin, a distance of 85 miles, and upon the conclusion of the encampment returned by marching to their station.

The Fifth Cavalry Band, under the command of the adjutant, First Lieut. W. E. Almy, proceeded to Austin and returned by rail without cost to the United States.

GYMNASIUMS.

I renew my recommendations of previous years on the subject of the establishment of post gymnasiums.

LYCEUMS.

As required by General Orders No. 80, Adjutant-General's Office, 1891, I submit herewith a statement of work accomplished during the past year in the lyceums of the various posts in this department. The papers

read and the progress made give evidence of interest in the work; and of creditable professional study and research on the part of officers generally.

POST EXCHANGES.

Post exchanges continue to accomplish admirably the purposes for which they were established, and doubts as to their being on the whole of substantial benefit to the service should no longer exist.

LAUNDRIES.

In my opinion, the establishment of steam laundries at permanent posts in this department, and their operations as far as practicable at Government expense, is almost a necessity. Enlisted men are now required to use many more articles of clothing requiring frequent washing than formerly, such as white trousers and blouses, linen collars, bed sheets, pillowcases, etc. The extra laundry expense involved falls upon the enlisted men, although no corresponding increase of pay or allowance is made. In this climate the wearing during many months of the year of the authorized duck clothing is imperative; the troops are required, of course, to keep this clothing clean and neat, and a considerable increase in the monthly laundry bill results. In justice to the soldier, this expenditure should be reduced to the minimum. Possibly by some additions to the plant of post sawmills, and the utilization as far as practicable of the labor of the troops, no great expense would be involved.

Attention is invited to the accompanying detailed reports¹ of the department staff, whose duties have been most satisfactorily performed. They are as follows: Maj. Arthur MacArthur, jr., assistant adjutant-general; Maj. Peter D. Vroom, inspector-general; Capt. Francis J. Kernan, acting judge-advocate; Maj. Gilbert C. Smith, chief quartermaster; Maj. John F. Weston, chief commissary of subsistence; Col. Francis L. Town, medical director; Col. Charles M. Terrell, chief paymaster; First Lieut. Henry L. Ripley, Third Cavalry, acting engineer officer; Maj. Clarence E. Dutton, chief ordnance officer; Capt. Richard E. Thompson, chief signal officer.

The report of First Lieut. John S. Mallory, Second Infantry, aid-de-camp, inspector of small-arms practice, will be forwarded in due time.

I desire to express my high appreciation of the services of my aids-de-camp, First Lieut. John S. Mallory, Second Infantry, and Second Lieut. George T. Langhorne, Third Cavalry, who have performed with zeal and industry the duties assigned them.

I am, General, very respectfully, your obedient servant,

FRANK WHEATON,

Brigadier-General, Commanding,

The ADJUTANT-GENERAL UNITED STATES ARMY,
Washington, D. C.

¹ Omitted.

REPORT OF BRIG. GEN. ELWELL S. OTIS.

HEADQUARTERS DEPARTMENT OF THE COLUMBIA,
Vancouver Barracks, Wash., August 15, 1894.

SIR: The last annual report of the affairs of this military department embraced the year ending July 31, 1893. The reports of staff officers which accompanied it and which were attached as exhibits thereto, closed with the year ending June 30, except as they concerned in part the personnel of the command, when the limit of the period reviewed extended to the first-mentioned date.

The present report which I have the honor to submit, while it recites the movements of troops and briefly alludes to the circumstances which necessitated and controlled them from July 31 of last year to the present time, confines remarks upon other departmental matters to the transactions of the fiscal year ending with the 30th of June last. Upon that date all the attached reports of the department staff officers conclude.

The last report was rendered by Brigadier-General Carlin, who continued to exercise command of the department until November 24, when, upon retirement, the commanding general of the Department of California was directed to administer its affairs, and did so until January 3, when I assumed control under proper assignment. Since then I have inspected the posts of the department, visited its most important points, and traversed its main lines of communication.

CHANGES IN POST GARRISONS.

During the year the following changes of organizations comprising or belonging to permanent garrisons have been made: In accordance with instructions from the Headquarters of the Army dated August 18, the station of B and E companies of the Fourth Infantry was changed from Fort Spokane to Fort Sherman. These companies reached the last-named post September 27. Under instructions from the same source of March 15, companies D and H, Fourth Infantry, left Fort Sherman April 10 and arrived at Fort Spokane, to which they had been permanently assigned, on April 17. These movements were effected by marching and through the use of post transportation.

On March 30 directions were given for the interchange of batteries A and C, Fifth Artillery, at Fort Canby, with two batteries of the same regiment stationed in the Department of California—movement to be effected about June 1. In compliance therewith batteries B and M arrived at Fort Canby on June 10 from the Presidio of San Francisco, and Fort Mason, respectively, and batteries A and C departed—the first for the Presidio and the second for Alcatraz Island—on the following day.

VALUE OF PRESENT STATIONS OF TROOPS.

The withdrawal last fall of two of the three companies which composed the Fort Spokane garrison looked to the complete abandonment of that post in the near future, since it was considered to be inconveniently situated, difficult to reach in certain seasons of the year, expen-

sive to maintain, and that it served no practical purpose in the region of country in which it was located. Fort Sherman, the headquarters of the regiment to which the Fort Spokane troops belonged, was deemed to be the proper point to which they should be drawn, and there it was believed that they could be comfortably quartered if comparatively inexpensive barracks could be constructed soon. Still, this disposition was viewed as of a temporary nature, since neither Fort Sherman nor Fort Spokane were properly located to meet all the conditions which a regimental post should possess, as both were removed from important lines of travel and centers of population. Estimates for the necessary barracks were submitted but failed to receive the requisite approval. The increase in the Fort Sherman garrison overcrowded the buildings of the post, especially those occupied by the enlisted men, causing much discomfort and annoyance, and in order to give required relief, a request was made early in the spring to withdraw part of the troops and reorganize Fort Spokane as formerly, which was favorably considered.

A careful computation of the cost of supplying the last-named post shows that it is not as great as that of supplying most of the others of the department, though greater than that attending Fort Sherman. The frequent calls of the last few months for the employment of troops to assist in maintaining law along the principal railway lines of the Northwest indicate that, with proper telegraphic communication maintained, the troops at Spokane are almost as quickly available for service as those stationed at Sherman. The city of Spokane, though much nearer the latter, must be drawn on for railway transportation whenever required by the garrison of either post, and the time consumed in an overland march of twenty-five miles might be regarded as the difference of the periods of availability of one over the other. Fort Sherman, however, is nearer the turbulent mining section of Idaho, where the use of troops has been frequently demanded and to which they are often sent, and on this account it has the most desirable location. But neither satisfy conditions which should determine permanence, and since the experience of last spring at the last-named post with the overflowing waters of the Cœur d'Alene Lake, by which it was submerged and its destruction threatened, the claim that it could or should be permanently maintained can not be reasonably supported. The experience of the last few months also demonstrates the wisdom of uniting the garrisons of these two posts at some more convenient point than either of those which they now occupy, in order to obtain quicker response to the demand for active service, and to be able to place in the field the largest numerical force possible. The strength of this military department is small and it has been lately taxed to its full capacity to respond fully to all the calls which have been made upon it. Had the garrisons of these two posts been united at a single station, the force available for detached duty would have been greater by at least one-eighth.

Viewing that entire scope of country to ascertain what locality best meets all the important requirements for which a post of our small Army under present Government conditions should possess, it is found that none offers the advantages of the city of Spokane. The main railway center of the extreme Northwest, it throws out its lines of speedy transportation in every direction. They reach the international boundary line to the north, extend to the east and west under an antagonistic management which offer competing accommodations for travel, pierce southern Washington and northern Oregon, connecting with other railway systems, and penetrate the mining sections of Idaho by two routes. In matter of time required to reach the different places of population in

that region of country, the city of Spokane is nearer than any other point available for the permanent station of troops. It possesses, also, the advantages of excellent climate, healthy location, with abundant good water, and the construction there of a large military post and its subsequent maintenance would be attended with a less expenditure of money than one at any other point in the Northwest. Troops quartered there would have under observation the great stretch of northern country from the Cascade range of mountains to the State of Montana and south to the Oregon line, and could be expeditiously placed wherever therein their lawful employment might be demanded. They would also be most conveniently quartered should it become necessary to temporarily detach from them any portion for service in a distant locality.

Since 1866 the Government has done very little looking to the protection of the Puget Sound and adjacent United States territory contained within the State of Washington against possible foreign attack, and there within the last few years population has greatly increased, and important coast cities, now conducting a considerable international commerce, have been constructed. No one doubts that the time is rapidly approaching when an extensive ocean trade will be carried on between these cities and the Asiatic and some of the European seaports, and a wise precaution must suggest that measures should be taken as soon as practicable to supply these growing communities with the material for land defense. Thus far the full limit of Government assistance extended in that direction has consisted in the selection, by expert army officers, of various points as sites for defensive fortifications, which in most instances the President has declared shall be reserved for such purposes, and of maintaining one or more companies of troops primarily sent there to prevent Indian depredations. During the ten years ending with 1866, thirty-three of these sites, lying along the Strait of Juan de Fuca, the waters of Puget Sound, and Bellingham Bay have been declared military reservations, and ten since that time. Some of the executive orders of declaration have been revoked, a few of the reservations have been given up and many of those still in part existing, having been affected by individual claims at date of declaration which have since been perfected, have been much reduced in so far as extent of Government title therein is concerned.

Recent improvements in ordnance, with its greatly extended range of fire, have rendered many of these sites of no further practical importance for military uses and should be abandoned. The United States Fortification Board so found, after an inspection of the boundaries of Puget Sound, made a few weeks ago to determine the best points at which to construct defensive works, and it reported but very few of the many sites still formally retained by the Government as suitable. It recommended eleven prominent points as naturally adapted to such purposes—some of which have never been covered by declaration and are owned by individuals, corporations, or Indians, or belong to the State of Washington. Should its recommendations be approved, it is urged that all locations in the Puget Sound country now held as military reservations and which the Fortification Board has virtually found not required for defensive works be turned over to the Interior Department for disposition, and that such as it has reported to be needed therefor be placed under military control, and by proper acquisition if necessary. By these means the way will be opened for the construction of the Government defenses which are generally conceded to be demanded and which undoubtedly will be undertaken as soon as general financial improvement admits of the requisite appropriations.

As regards protection given to the inhabitants of that section through garrisoned posts, it has been in the nature of police, and of benefit only in seasons of Indian hostilities. Fort Townsend, established originally in 1859, still remains and is garrisoned by a single company of infantry. The only advantage to be derived from its retention consists in the fact that it furnishes shelter for troops, for as far as the possibility of employing its small garrison is concerned in the performance of duty for which the Army is maintained, it might almost as well not exist. It is true a detachment was drawn from it for service at Tacoma in the recent railway disturbances, but that was because of the necessity to concentrate as large a military force as possible to successfully execute the instructions of the War Department. It is only under such pressing exigencies that the Townsend garrison would be summoned from its secure retreat.

In some locality of the northern section of this State beyond the Cascade Mountains, where now dwell 100,000 people, part of whom are restless, demonstrative, and oftentimes turbulent upon fancied provocation, and a population, too, which is destined to be greatly augmented within a brief period of time, one moderately large garrison should be established and permanently maintained. The vicinity of Seattle offers the most favorable conditions for location, as that is the center of a small territory in which the future use of troops will be demanded, and the place at which exhibitions of lawlessness beyond the power of the State to control have so frequently manifested themselves. A short distance beyond the city, extending into the waters of the sound, Magnolia Bluff, one of the most important points selected by the Fortification Board for defensive works, would appear to be the proper site for the post of an infantry garrison, to be succeeded, as it doubtless would be after a few years, by an artillery command. There the Fort Townsend garrison should be stationed and be materially increased. A force there of only a single infantry battalion, if no more troops were available, would be of great service. With efficient garrisons at the cities of Spokane and Seattle, and with the present Vancouver Barracks' strength kept intact, all localities within this military department, with the exception of southern Oregon and Idaho, could be quickly reached by effective bodies of troops, and as permanently placed, would be in position to observe the northern international boundary line. Southern Idaho and a good portion of southern Oregon would be in easy communication with Boise Barracks, in respect to which the long-mooted objection to its indefinite continuance as a military station has been met by a recent abundant supply of water. Should not some such use of the Fort Townsend garrison be made? I would then respectfully recommend its removal to this point and the abandonment of the post.

Fort Canby, at the mouth of the Columbia River, is increasing in importance. The long jetty projected from Fort Stevens, against which sand, drift, and sediment gradually accumulate, will extend the south bank of the river by constant accretion toward the ocean and leave the last-named fort a considerable distance inland. The river channel has been straightened and its outlet carried farther out to sea, which will bring entering vessels more completely under Fort Canby's guns. These, with the assistance of those which it is contemplated to place, in the distant future, possibly, at Stevens and on the military reservation of Scarboro Head will effectually command the river entrance and connecting harbor, and no other land defenses on the river banks are

needed. The Three Tree Point military reservation, containing 640 acres of unincumbered land, could with propriety be turned over to the Interior Department for disposition.

FIELD SERVICE OF TROOPS.

Early in April there commenced to congregate in the city of Portland from various points on the coast an assemblage of men styling itself "The Industrial Army," whose avowed purpose was to journey to Washington, D. C., to seek legislation at the seat of Government in the interest of unemployed labor, which it claimed to represent. It developed rapidly until it numbered in its organization more than 500, and its demonstrations created the impression that it would endeavor to compel the railway lines of the country to transport it East free of cost, or would forcibly seize the rolling stock of the roads and proceed with it over the lines at its pleasure.

Toward the latter part of the month, demonstrations became so threatening against the Union Pacific Railroad, which was being managed by receivers under the control of the United States court as to become apparent that the court would not be able, with the civil force at its command, to execute its orders with regard to it, either in the matter of operating it or in protecting its properties. While this organization was being developed there sprung up in the smaller cities along the railway lines like combinations with similar proclaimed intent, and at Tacoma and Seattle an army was gathering which a little later numbered within its ranks, if report is correct, some 1,200 or 1,500 men. All interstate railway lines within this department, with the exception of the Great Northern, were under the jurisdiction and control of the United States courts, and it was the duty of the United States Government to protect them from forcible seizure and destruction. The perceived condition of affairs made it manifest that the courts would not be able to execute its mandates through the civil power alone, and that troops must sooner or later be called upon to furnish assistance. In that belief and to secure immediate response from the troops when their aid should be legally summoned, instructions were given on April 25 to the commanding officers of Forts Walla Walla, Sherman, and Spokane to hold their commands in readiness for immediate detached duty on call, properly supplied for field service, and the Vancouver Barracks garrison was held for prompt movement to the east or north as necessity might indicate. About that date the Portland organization had proceeded on foot a few miles along the Union Pacific Railway track, when it made threats to seize and make use of a train unless the railway authorities would agree to furnish it with free transportation. The authorities not acceding to the demands, it seized, on April 28, an engine of a west-bound passenger train, attached it to a number of box cars in that neighborhood, and, thus equipped, it moved rapidly eastward.

Within an hour after intelligence of this proceeding had reached these headquarters, directions were received through the Headquarters of the Army to assist the United States marshal for Oregon with the force necessary to execute the process of the United States court, and immediately orders were dispatched to the commanding officer of Fort Walla Walla to intercept the stolen train of which the marshal informed me by telegraph that he was in pursuit. The troops moved with commendable promptness, and within six hours after the order had been given seized the train 100 miles west of their point of departure,

captured the entire organization, and delivered it to the marshal, who shortly thereafter arrived. At his request the troops assisted him to escort the prisoners to the city of Portland, which it reached the following morning, and they continued to furnish the necessary assistance until the evening of the 30th, at which time they were informed by the marshal that the civil authorities did not longer require their aid, when they were returned to their station.

The seizure of the Union Pacific Railway property by the Portland industrial army organization was in violation of the special mandates of the United States court issued a short time previous to the commission of the offense, and the members of that organization had been duly informed of them. Their act was in open defiance of the authority of the court and of the warnings of its executive officers, who were in their midst at the time the act was committed.

The manifestation of the dangerous spirit of lawlessness which this premeditated violation of law indicated was viewed with apprehension by the better classes of citizens. It was not believed that this spirit was confined to the Portland combination, but that it likewise actuated the large organizations at Tacoma, Seattle, and Spokane; and the fact that a portion of the populace who had not sought membership therein encouraged their demonstrations tended to increase the excitement. It was, therefore, considered prudent to so prepare and station troops that they would be in readiness for prompt action when summoned, as it was evident from existing indications that they would be, if the authority of the United States court was to be sustained. With that end in view the commanding officer of Fort Sherman was directed, on April 29, to proceed with his entire infantry force to the city of Spokane and there encamp on the line of the Northern Pacific Railway. The bulk of the Vancouver Barracks garrison was made ready for detached service and river transportation was secured and held at the post for its immediate departure for the cities on the Sound, and the Walla Walla and Boise Barracks troops were prepared to move with celerity to any point where their assistance should be required.

The force encamped at Spokane, and the belief entertained by the industrial organizations that it was empowered to aid the civil authorities to resist any unlawful interference with the property of the Northern Pacific road, prevented at the outset the seizure of trains there and to the westward, and the Seattle and Tacoma organizations commenced their meditated long journey on foot. Spokane was announced as the first objective and thither they propose to proceed, traveling in detachments. Progress by such means through a rugged, sparsely inhabited country by any assemblage of men lacking money and provisions would naturally tend to discouragement, and if the majority of those individuals, as in this instance, were alone deterred from committing unlawful acts which would aid them in the prosecution of their enterprise, by the fear of suffering punishment through the courts, it must necessarily result in demoralization. In Ellensburg, east of the Cascade Mountains, and at other points on the line of the Northern Pacific road, the demoralized detachments endeavored to accelerate their journey by boarding east-bound trains and taking possession of railway property. This culminated in conflicts between them and deputy marshals, who arrested some two hundred and returned them to Seattle for presentation to the United States court. The conflicts along the line of railroad and the arrests made intensified the excitement, and lawlessness increased until the civil officers were powerless to execute

the injunctions of the court or to give protection to railway officials and communities.

Many detachments had reached Spokane, and there not only interference with railroad property but mob violence was feared; while at Seattle the return of many of the industrials as prisoners had created mob demonstrations which aroused grave apprehensions. Under these circumstances the United States district judge for the State of Washington requested, on May 12, the assistance of troops to enforce the orders of the United States court, and directions from the War Department were received to furnish the required aid. The Vancouver Barracks force moved at once, reaching Seattle early in the afternoon of the following day. Proper instructions were communicated to the Sherman force at the city of Spokane to execute the orders of the Government, and all available troops at Fort Spokane were hurried forward to the line of the Northern Pacific road. The presence of the troops arrested violence and restored confidence, although no very marked active interference on their part was demanded.

Three days thereafter instructions were received through the Headquarters of the Army, announcing the inability of the United States marshal of Idaho to execute the process of the United States court issued for the protection of railway properties in that State, and directing that such military force be used to enforce the court's orders as might be necessary.

A considerable number of the formerly arrested Portland industrials, after having been discharged by the United States district court for Oregon on the last day of April, had managed to enter southern Idaho, and in connection with tramps collected on the line of travel again sought to interfere with the management of the Union Pacific road. They finally succeeded in gaining possession of a train near Pocatello and hastily departed eastward. The infantry company at Boise Barracks followed in pursuit, but the train with its occupants, about two hundred in number, was arrested at Green River by troops of the Department of the Platte. That company and a company of infantry from the Platte troops assisted the marshal for Idaho to take the criminals to Boise City, where they were held by the Boise Barracks garrison, assisted by a troop of cavalry from Fort Walla Walla, which had been previously placed on the Union Pacific road at Nampa to await disposition by the court.

In the meantime the industrial detachments which had congregated at the city of Spokane began to pass around the troops encamped there, announcing Helena as their second objective. They threatened the main line of the Northern Pacific road through Idaho, also its branch through the Cœur d'Alene mining region. The troops at Spokane were thereupon relieved by a force sent from Walla Walla and moved eastward, part as far as the eastern limit of that State. Subsequently those in western Idaho, strengthened by a company of infantry from Seattle, were sent to the Cœur d'Alene mines at Wallace. The last of the Vancouver Barracks infantry companies was dispatched to Umatilla Junction to prevent the wandering detachments of industrials from passing southward from the Northern to the Union Pacific Railroad with stolen property. Even in face of all the precautions and deterrents, some of these constantly moving detachments, pursuing their eastward route on foot along the Northern Pacific road, passed into Montana, and supposing that they were then beyond army interference, seized and appropriated the first train of cars which they met. They were, however, dislodged before proceeding far, as quick communication

with Montana's marshal and a request for assistance enabled the troops to pursue and recover the stolen train.

The vigorous action taken by the United States courts to arrest and punish the violators of law, and the promptness and intelligence with which the troops executed their instructions, soon disintegrated and scattered the fragments of these so-called industrial armies. Of the 3,000 or 4,000 men who composed them, the small proportion which passed beyond department lines could do but little mischief, lost their importance, and escaped from observation. In enforcing their orders the troops met with only faint resistance. They performed their duties effectually and brought about desired results very quickly, so that by the 25th of May their return to their permanent stations commenced, and was completed by the end of the month, except as to the force at Boise City, which still retained possession of the prisoners held there for trial by the court. The cavalry portion of the latter was returned to its permanent station at Walla Walla on June 12, and the infantry company, together with one which had been sent to Boise Barracks from Vancouver, assisted to escort the majority of those prisoners to an improvised prison on the western limit of Idaho, near Huntington (to which they had been sentenced to serve periods of confinement), and remained there, furnishing protection to the deputy marshals in charge in the execution of their duties and preventing the prisoners from effecting escape—the first until July 5, and the second until July 16, when the former returned to its station at Boise, and the latter was dispatched to the city of Spokane for temporary duty in connection with the railroad strike, it having been relieved by the cavalry troop at Boise, which remained at the prison until July 19, when all prisoners had been formally released.

The recent railway labor difficulties began to manifest themselves in this military department during the latter part of June. Early in July the Northern Pacific road was completely paralyzed, and the United States courts under which its receivers had been operating the system found it impossible, with the civil force at their command, to remove the obstructions which strikers and their sympathizers had imposed. Interstate commerce and all mail service were forcibly obstructed and entirely suspended. On July 7 instructions were received, through the Headquarters of the Army, directing that the troops be employed to assist the civil authorities to execute the orders of the United States courts, issued for the safety of the property of said road, and also to give it such protection as would enable its officers to operate it for the postal, military, and all other Government services.

Immediately all available troops at Vancouver Barracks, Forts Walla Walla, Sherman, and Spokane, were directed to depart on the directed service—those at Vancouver Barracks to Tacoma; those at Walla Walla to Pasco, the railroad crossing of the Columbia River; those at Fort Sherman to the city of Spokane, and those at Fort Spokane to Davenport. All, with the exception of those from Fort Spokane, reached their destination early the next day, and the latter reported at Davenport, after a march of 25 miles over a rough road, on the afternoon of that day, and from thence were directed to proceed to Sprague. Orders were also issued to the commanding officer of Boise Barracks to hold his troops in readiness for detached service on call; to Fort Canby to so hold one of the two batteries at that point, and to Fort Townsend to place 30 men of the company composing that garrison in readiness to proceed to Tacoma.

The Boise garrison, which was reserved for service on the Union Pacific road, where conditions appeared threatening, was not summoned for detached duty, as the employees of that road remained quiet. On July 8 the Canby Battery and the Fort Townsend detachment were forwarded to Tacoma to report to the commanding officer of the Vancouver Barracks troops, and on July 10 the cavalry troop stationed at this point reported there for duty, mounted. The commanding officers of Vancouver Barracks and of Forts Sherman, Spokane, and Townsend accompanied their troops, and as rapidly as quiet was restored at the more populous locations the troops were distributed along the main line of railroad at the more important railway points, such as Tacoma, Ellensburg, Pasco, Sprague, Spokane, and Hope, from which trains were dispatched and escorts furnished. The mounted cavalry were employed to guard the important bridges and the valuable railway shops near and east of Tacoma, and the Canby Battery was sent to eastern Idaho to furnish the additional assistance needed in that section. Neither forcible resistance nor open hostile demonstrations were encountered by the troops. A few rifle shots passed in their proximity while they were passing to take positions on the line and a few bridges were destroyed, but these manifestations of wicked intent soon ceased. Within a short time the railroad was repaired and was being operated to its full capacity. A gradual withdrawal of troops from this main line of the Northern Pacific commenced on July 23, and all had reached their permanent stations by the end of that month.

During the progress of these labor difficulties a condition of affairs developed in the Coeur d'Alene mining region, through which an important branch of the Northern Pacific road runs, which the authorities of the State of Idaho declared themselves unable to control, and a request for United States troops was made. It was claimed that the inhabitants of that section were terrorized by striking miners and former railway laborers and that law could not be administered or safety of life insured. Thereupon the War Department, on July 9, directed that a company of infantry be placed at Wardner, Idaho, there to remain in camp until the receipt of subsequent orders relieving it. An infantry company of the Fort Sherman garrison was withdrawn from the main line of the Northern Pacific road and stationed at Wardner as directed. The citizens were found to be peacefully pursuing their vocations and the mine in that neighborhood to be in operation. The company quietly remained there until July 28, when having been joined by another Fort Sherman company withdrawn from Spokane, and by the Fort Sherman cavalry troop, dismounted, the united force was moved on to Wallace, the heart of that mining region, for the purpose of rendering assistance to put the Northern Pacific branch of railway in operation from Wallace to Missoula. It was anticipated that the execution of this duty would be attended with some difficulty, but none was encountered. The railway trains were pushed through without molestation, and soon the mines at Wallace and Burke were being successfully worked. The troops still remain at Wallace awaiting result of application made a few days since requesting permission to withdraw them from that section of country, as their longer presence there is not believed to be necessary.

I have thus briefly sketched the uses made of the troops of this department in assisting to restore order, to protect property under the control of the United States Government, to remove the obstructions which destroyed its mail service and fettered interstate commercial relations, from the latter part of April to the present time. During the

entire period some portion of the department force has been engaged in the performance of such duties, and on two occasions, covering the space of a month, about all of its available strength was so employed. The duties were oftentimes disagreeable and severe, still they were promptly and efficiently executed, uncomplainingly and indeed cheerfully. No law was transgressed, no undue exhibition of authority was attempted. No complaint from any source has been preferred against officer or enlisted man. Good conduct and honest effort characterized the actions of all. The zeal and efficiency displayed indicates the morale of the troops.

During the fall of last year a hunting party composed of citizens entered the Clearwater River country of central Idaho. In November it was reported that the party was still in that section and that, if it had not lost its bearings, would be unable to extricate itself because of the great quantity of snow which had fallen there. With a view to its relief the department commander sent into that country small detachments from Forts Sherman and Walla Walla under charge of Lieutenants Elliott and Overton, of the Fourth Cavalry, and upon his request a detachment was sent to the southwest from Missoula, consisting of Captain Andrews and Lieutenant Caldwell, of the Twenty-fifth, and Lieutenant Martin, of the Fourteenth Infantry, with a number of enlisted men, furnished with civilian guides.

The Sherman and Walla Walla detachments traveled by rail to Kendrick, Idaho, from thence dropped down onto the Lolo trail and proceeded in an easterly direction. That from Missoula passed through the Bitter Root Mountains at the Lolo Pass and penetrated the country almost to the North Fork of the Clearwater. All detachments suffered great hardship, as the depth of snow in that section at that season of the year was unprecedented. The detachment in charge of Lieutenant Elliott was successful in rescuing the hunting party, which it found about 60 miles southeast of Weippe, a point on the Lolo trail a short distance east of the Nez Perce Indian Reservation. The experience of these detachments showed that very little is known of the topography of that section of country, and that even the limited knowledge already acquired is of slight practical importance. In order to obtain more correct information of the main topographical features of that section, instructions were issued on July 24, also July 27, directing First Lieutenant Leyden, Fourth Infantry, and First Lieutenant Elliott, Fourth Cavalry, with small mounted detachments and pack trains, to enter and explore it; to determine the sources and directions of important streams, the configuration and character of country, and the practicable routes of travel, if any exist, and to report the result of their explorations to these headquarters. Lieutenant Leyden's detachment is now engaged in reconnoitering the country between the Mullan and Lolo trails, and that of Lieutenant Elliot the country lying south of the last-named trail. They will be absent engaged in this work until about October 1, and much valuable information is expected to be gained from their efforts.

All organizations which could be spared from the garrisons of Forts Spokane, Sherman, and Walla Walla, and from Vancouver and Boise Barracks, engaged in practice marches and field exercises last fall. About two-thirds of all of the troops of the department participated, and those from the first three of the above-named stations were concentrated in camp of instruction near the city of Spokane. The average length of march for the company organizations of the Vancouver Barracks garrison was 70 miles, which, together with its exer-

cises en route, occupied one week. The Boise cavalry was in the field twenty-five days, and marched 260 miles. That of Walla Walla was out the same length of time, and marched 340 miles; but one-third of this period was spent in camp of instruction with the Forts Spokane and Sherman garrisons. The troops of the latter were absent from their permanent stations in camp and on the march two weeks, and marched about 80 miles. No extra expenditures attended these movements, either in the matter of transportation or supplies, which were drawn from the posts. Any extended exercises of this character for the present year are not in contemplation, because of the amount of active field duty already given the troops since April, and because such detached service has thrown the post instruction, which was prescribed last spring, and the annual target practice far in arrear.

DISCIPLINE, EFFICIENCY, AND INSTRUCTION OF TROOPS.

I consider the discipline of the troops of the department in quite satisfactory condition, judging as I do from personal observation, the reports of staff officers, and the services lately rendered. Their previous good standing has been maintained and the numerical strength of organizations has been kept near the maximum at the least limit of expense. The enlisted strength June 30, 1893, was 1,376, and at the end of last fiscal year, 1,432. Since then enlistments and assignments of recruits have completely filled the troops and companies. The number of discharges given for all causes was 371; the loss by death was 12, by retirement 5, and by desertion, 56. The gain received during the year, through enlistments and reenlistments within the department, and recruits from the general recruiting depots, was 464, and from desertion, 34. Of the gain through enlistments and reenlistments only about 40 per cent came through the general recruiting depots. The Fourteenth Infantry has been almost entirely supplied by reenlistments and by regimental enlistments in the city of Portland.

The small percentage of desertions for the past year—much less than that of any previous like period—is doubtless due both to the greater contentment of enlisted men and to the fact that civil employment has of late offered fewer inducements to enter it than formerly. The latter conclusion is supported by the results of the six months ending with June, in which time desertions were only about 1 per cent of the strength of the command, and were equaled by receipts from desertion.

There have been very few serious offenses committed except that of desertion, and general courts-martial have been few. Cases brought before summary courts, however, have been about the same in number as those of most previous years, the strength of the command considered, and 10 per cent greater than for 1893. The increased number over last year may be attributed to the increased percentage shown by one or two posts, where slight derelictions of duty have been punished through court-martial appliances rather than through other disciplinary measures. There is a constant growing tendency among officers to submit all instances of slight breaches of discipline, and also all neglects of every nature, to the investigation of summary courts, whereas in former years brief periods of confinement, or the withholding of accustomed privileges, were resorted to; and the extent of such lawfully proclaimed summary proceedings is better proof of the development of this tendency than evidence of the discipline of the garrison.

The action of Congress in rescinding the law barring enlistments

after ten years' service gives satisfaction, and will retain in the Army a valuable portion of our enlisted strength. A great many men serve ten years before they reach the age of thirty, and are then in full physical vigor, and although they may not have attained the position of noncommissioned officer, are well disciplined, reliable, efficient soldiers, and most useful members of company organizations. The privilege of future enlistment, should they desire to exercise it, made dependent on past faithful service, is an incentive to good conduct; and the assurance that the means of livelihood is open to them, although they have shut themselves out by enlistment in early manhood from civil advantages which might have offered, is a source of contentment. The ratio of desertions, of sickness, and of other losses in available strength is slight among this class of enlisted men, and although many of them will pass on to retirement, it will, I think, be found by careful calculation that the expenditure attending their service and subsequent retired pay offers a more economical means of maintaining the Army than through the single short enlistment, attended by its much greater ratio of desertions, discharges, and transportation expenses. Could Congress go still further, and promise employment in the civil service to those who shall have served faithfully as soldiers for say fifteen years or twenty years, and who manifest requisite capacity and correct impulses, a great additional incentive for good conduct and honest effort would inspire the rank and file of our regiments.

Orders directing the character and scope of practical instruction in drill regulations and other military exercises to be given the troops of the department from April to October, inclusive, were issued on March 31. The many interruptions to the systematic prosecution of the course prescribed, caused by the demands of field service and the late consequent date when the annual target practice will be finished, will render its full completion, as intended, impossible. However, a fair degree of proficiency in these matters is manifested by the troops. A great aid in this practical acquisition could be derived from commodious drill halls, however cheap and inartistic their construction. In this section of country, the almost continuous rains and snows make out-of-door drills in certain months of the year impracticable, and it is difficult to give the troops that physical exercise which even health demands. Drill halls and gymnasiums at every post would be considered a necessity, if that physical training and that healthy daily occupation which is essential to produce efficient and well disciplined soldiers were rightly considered. Such accommodations and appliances would not be attended by a heavy expense and are more essential than extravagant quarters, barracks, and storehouses. A true economy might suggest that some of the money appropriated for barracks and quarters could be diverted to such uses.

The theoretical instruction pursued during the year and the work accomplished in lyceums and schools is shown in the appended reports prepared by the Assistant Adjutant-General. That of post lyceums has produced beneficial results and has been of a character which should continue to occupy the attention of officers. Such labors, if properly conducted, keep fresh in their minds a knowledge of their accustomed duties, broadens their perceptions of military science, and furnishes healthy intellectual occupation. The training derived from the preparation of essays on professional subjects must greatly assist the mental development of our officers in the desired direction.

THE SUPPLY DEPARTMENTS.

The affairs of these departments have been economically administered during the past year, and probably with a less expenditure of money than any previous year for a long period, if the excessive amount paid out in the purchase of cavalry horses is not taken into consideration. The total yearly expenditure is less by one-half than that for a number of years preceding 1890, but only a little more than \$20,000 was expended in 1894 for the repair and construction of buildings. The cost of regular supplies for the past year was about the same as that of each of the four preceding years. Those supplies and the subsistence which will be purchased in the department during the present fiscal year will not involve so great an outlay, as contracts have been awarded at decreased rates.

INDIANS.

For the first time in the history of this military department there is nothing to report on this subject. This class of population, dwelling within department limits, numbering about 16,000, and having in possession 11,000 square miles of territory, have not created any disturbance nor been the cause of any hostility which called for the intervention of the Army. So far as known they are peaceably inclined. The tendency of legislation to abridge their reservations and give them lands in severalty continues, and, under recent decisions of the courts, the wardship which Government has heretofore exercised over those whose who have individually accepted holdings in land is disappearing.

I am, sir, very respectfully, your obedient servant,

E. S. OTIS,
Brigadier-General, Commanding.

The ADJUTANT-GENERAL UNITED STATES ARMY,
Washington, D. C.

REPORT OF THE UNITED STATES CAVALRY AND LIGHT ARTILLERY SCHOOL.

FORT RILEY, KANS., *December 20, 1893.*

SIR: Pursuant to the requirements of General Orders No. 17, Adjutant-General's Office, series of 1892, I have the honor to make the following report of the progress and wants of this school for the year beginning January 10 and ending December 20, 1893.

The progress of instruction in the two subschools is fully treated in the reports (hereto appended) of their directors and need not be enlarged upon by me. Being personally cognizant of the character of instruction in the cavalry subschool, I can add that it has been admirably systematized and thoroughly conducted by Lieut. Col. L. H. Carpenter, Fifth Cavalry, its director, in accordance with the scheme set forth in detail in his report.

The progress made by both squadrons has been entirely satisfactory, but on account of a lack of time, due to its late arrival, and detached service in the Cherokee Strip, the instruction had by the Third Cavalry Squadron could not cover the entire schedule or follow it systematically. For the same reason it could not this season take part with the rest of the cavalry in all of the field exercises conducted in the cavalry subschool. These exercises were carefully planned by Colonel Carpen-

ter, and the degree of proficiency attained in their execution was exceedingly gratifying.

Combined operations began with brigade drills, and it was found that the two arms had been so well instructed separately that few of these were necessary. A brigade was simulated by two squadrons of cavalry and one battery of light artillery, and this organization was found to answer very well for purposes of instruction, the only serious inconvenience being a shortage of officers.

COMBINED MANEUVERS.

Prior to the beginning of any field exercises, a scheme covering the same and rules and principles for the government of umpires and troops in their execution (both hereto appended) were prepared and approved by the school staff. The general plan of conducting them is embodied in the following extract from a memorandum submitted, discussed, and adopted by the staff on August 12:

(1) Since the object of field exercises and combined maneuvers at this school is to "train the artillery and cavalry in all that pertains to their field duties in time of war," the methods of conducting this instruction should be such as to assume conditions and require action which would assimilate as nearly as practicable to those existing and that occurring during a state of actual war.

(2) With this object in view it is suggested that the method outlined by the following general ideas be adopted in carrying out such exercises here.

(3) In all maneuvers calling for the operation of opposing forces they should be required (for purposes of identification and convenience) to dress, the one in white helmets or forage caps and blue uniform, the other in brown canvas fatigue clothing and campaign hats. The troops wearing said clothing should be designated in all orders, reports, correspondence, etc., as "Blue" and "Brown," respectively.

(4) It may possibly be sometimes found convenient and liable to facilitate the preparation of orders if the command be divided, one part being designated and required to uniformly dress as a "Blue" while the other is required to assume the clothing of and continue a "Brown" force, during certain exercises. The maneuvers should, in such a case, be so planned as to require each force to operate an approximately equal number of times under practically the same conditions; for instance, when it becomes desirable or necessary to repeat a maneuver the positions and instructions might be reversed, the one being assigned the relative position and duty previously occupied and performed by the other.

(5) If necessary, in order to sustain the realistic quality of certain maneuvers, forces of appropriate strength should be assumed to be camped in convenient localities, and all instructions issued should be in harmony with said assumptions. They should set forth the assumed conditions necessary to the maneuver in hand as if they really existed, and should give such other information as would be desirable and practicable in actual hostilities.

(6) In all combined maneuvers the instructions must be issued by order of the commandant of the school, but instead of being headed "U. S. Cavalry and Light Artillery School, Fort Riley, Kans.," they should bear a caption consistent with the assumptions made; i. e., "Headquarters Brown or Blue Division, Brigade, Regiment," etc., in camp at "So and So." They should be signed by the secretary of the school, under a fictitious title consistent with the general assumption of the occasion; i. e., "Acting Assistant Adjutant-General, Blue Division, Brown Brigade," etc., or "Adjutant Such and Such, Brown or Blue Regiment."

(7) All these instructions should be marked, in the upper left-hand corner of the paper, "Course of instruction, U. S. Cavalry and Light Artillery School," together with the serial number of the exercise or maneuver. All reports, correspondence, etc., should have a caption, and be signed with titles, in harmony with the instructions for the exercise, and be likewise marked in the upper left-hand corner in a similar manner.

(8) Full and complete reports, sketches, itineraries, etc., should be promptly rendered concerning and after each day's work.

(9) In order to give time for the preparation of these reports, etc., it is thought there should not be undertaken, to start with, more than three maneuvers per week.

(10) If found practicable, descriptive memorandums covering, generally, the exercise to be undertaken on any particular day should be prepared and printed for general distribution, to each force concerned, in advance of execution, so that all

(including enlisted men) may have some idea of what is to be attempted. Such memorandums might include a few cautionary general principles pertinent to the execution of the maneuver described.

(11) Succeeding every maneuver similar memorandums or reports should also be printed and distributed, calling attention to violations of principles, observed during execution, and making explanations as to how the dispositions and conduct of any component of the force engaged might have been improved. The preparation of these later memorandums would be expected of umpires, to be designated for each maneuver prior to its execution. It goes without saying that the successful performance of this important and delicate duty would call for a high order of professional cultivation, observation, judgment, discretion, and tact.

(12) The facilities offered by the hospital and signal corps should, whenever practicable, be utilized as auxiliaries.

(13) Conventional rules for the government of all concerned should be adopted after experience has indicated what may be desirable in this connection. Certain salient general principles should also be enunciated which could not, generally speaking, be violated, in a time of actual hostilities under present conditions and armament, without great risk of extermination or undue loss. Such rules and principles would serve as a guide for umpires in their decisions and remarks.

(14) It has been customary in various places to have umpires render their decisions upon the field, but, until more experience is had and a greater number of officers shall be available for duty as umpires, this method does not seem best adapted to our conditions.

All exercises were carried out in accordance with these principles, but, on account of not having an adequate printing plant, it was found impracticable to print memorandums as suggested in 10 or umpire's reports as referred to in 11. Written reports, however, were submitted by umpires, and these were kept in a place convenient for examination by all officers interested.

There were also exhibited the other reports, maps, itineraries, etc., submitted in connection with each exercise. The rendering of these reports is considered one of the most important auxiliaries for securing instruction in an indirect manner. They were all of an excellent character, displaying great interest in the work and a keen appreciation of the merits and defects of actions had and observed.

It is to be regretted that these papers are too voluminous to be published in this report.

As anticipated in 14, the few officers available for duty as umpires, and the limited experience possessed, rendered it undesirable to have decisions made always on the field.

It is hoped that the temporary services of a sufficient number of officers to thus perform this duty may annually be allowed us; yet even then, where each exercise is participated in by a numerous force, with a large percentage of artillery, many difficulties, affecting a solution of the problem of satisfactorily umpiring field exercises, would still remain unmet and demand adjustment.

As in actual fighting results are invariably brought about by arms, so in mimic warfare should decisions of umpires, as far as practicable, represent and replace those results. In exercises here these decisions involve a consideration of the relative situation, performance and strength of opposing forces, aggregating eight troops and three batteries, which are frequently, in the course of an exercise, located from a mile to a mile and a half apart.

Whenever conditions arise or action is had which in real warfare would probably produce a certain result, theoretically, all further action should halt at once until a decision, appropriate to the situation, can be made by an umpire. For instance, should Troop A—bent upon assaulting the apparently unprotected flank of Troop B—unwittingly expose itself, while moving to the attack, to a shrapnel broadside from Battery C, or a destructive fire from Troop D, immediately should

action cease all over the field, until an umpire has assessed the damage done to A. Otherwise (unconscious of any loss) it hurls itself upon and claims the annihilation of B, which has properly depended upon C and D as sufficient protection for its exposed flank.

This suspension of action is very well in theory, but impossible in practice. The noise of guns and carbines, combined with high wind, renders it impossible, by means of any signal yet devised, to suddenly and simultaneously stop action over the entire field of operations of such a force.

Even if it were possible, the amount of time consumed in conveying information of the decision, and orders based thereon, to those components affected would be so great as to render such frequent and lengthy suspensions of very doubtful advantage.

The presence of an umpire with each troop and battery might, upon slight consideration, appear to promise a removal of the difficulties of satisfactorily rendering decisions on the field, but some, not easily overcome, would still remain. When there are so many tempting targets all about, and so much excitement exists, it is hard to tell from long ranges just what a battery is firing at. Consequently Troop A (with its umpire)—a mile away—may remain unconscious of destruction by the long range fire of Battery C; it may immediately thereafter execute a really praiseworthy and meritorious maneuver, and be considered the victor by all umpires in that vicinity, when in the knowledge of the umpire with Battery C it had already been demoralized before its supposed success was attained, and should possibly have been ruled out or assessed a damage before the chance to execute its brilliant feat had arisen.

Whilst it is undeniable that occasions may frequently arise where organizations, or parts thereof, should clearly be declared hors de combat for gross violations of tactical principles; and whilst it might sometimes be practicable to designate the side entitled to the balance of advantages gained in isolated combats, I very much doubt if it will ever be practicable, by decisions on the field (or otherwise for that matter), to demonstrate to the satisfaction of any force that its opponent has gained a victory.

Nor, indeed, is this necessary for purposes of instruction, since an umpire has done well who observes and points out all violations of principles, and gives good tactical reasons for his decisions. With sometimes imperfect personal knowledge, and in the face of so many conflicting circumstances and interests, it is difficult to determine wisely even after mature reflection. How, then, could exact and summary justice on the field be expected of umpires surrounded by confusion and excitement and sometimes by rival claimants? Besides all this, ruling organizations off the field, unless observed and understood by all, would not have as much effect, in the way of instruction, as commenting upon their violations of tactical principles in a printed report which is widely circulated. And again, even though organizations still continue on the field, after suffering disaster or defeat, it by no means necessarily follows that harm is thereby done to the cause of instruction. As long as they remain active opportunities to learn may still arise; ruled off, all chance to practice theory is gone.

The most important object of maneuvers is, of course, to afford a variety of situations wherein troops can have opportunities for practicing tactical principles already learned in theory, and not to test the relative skill of individual commanders, or to do exact justice to the achievements of forces under their command.

I am therefore of the opinion that the system of umpiring best adapted to the situation at this school is one combining the features of oral decisions on the field (in unmistakable cases only) with a well-considered written report of a chief umpire, based upon his own observation and upon reports submitted to him by assistant umpires, one of whom should accompany each organization. These umpires should carry watches running together, and note all significant proceedings, with time of beginning, duration, etc. Such observations would often prove of value in untangling knotty disputes of advantage and disadvantage between opposing forces. The chief umpire's report should be printed for general distribution. It is no more reasonable to expect that decisions thus arrived at should ever be entirely in harmony with the views of both sides, than to expect the opposing forces of a real battle to take the same view of its merits; yet for purposes of instruction it is confidently believed that a system will finally be evolved along these lines which will meet the wants of the situation, as well as practicable, and be reasonably satisfactory as to salient principles and main essentials.

I have been unable, after much investigation, to find any system or example of umpiring, practiced either at home or abroad, which has been entirely satisfactory to the participants in field exercises.

The schools of instruction for the hospital and signal corps, previously established here, are still admirably conducted. The men thereof were afforded as many opportunities for practice as possible, and their presence and services contributed much to the realistic features of the exercises.

REMARKS AND RECOMMENDATIONS.

It is believed that great benefit would result both to the service and to the individuals selected, if, during the months of October and November, a number of suitable officers could be annually ordered here to act as assistant umpires at field exercises. It is urgently recommended that this suggestion be given a trial next fall.

Material interference with instruction has again resulted from detached service of both officers and men. During the theoretical course of last winter several officers were detailed by name and ordered away on court-martial duty, where they remained nearly a month. Two of them were instructors, and work in their departments had to be suspended. It seems reasonable to suppose that there might have been found elsewhere other officers available for that duty.

The Third Cavalry squadron arrived in the middle of the school year. Three of its troops, having been continuously in the field on the Mexican frontier, had little or no opportunity for instruction in the new drill regulations, and needed, for this purpose, all the time obtainable. But notwithstanding the squadron had just been on that duty, it was again detached for field service in the Cherokee Strip.

If unusual results in the way of instruction were not expected of troops at this post, I would have nothing to say on this subject, but they should surely not be thus detached when there are others available which do not constitute part of a school of instruction, and of which special work is neither required nor expected.

I have many times remarked, and now repeat again, that if it is desired this school shall ever be well established, detached service must practically cease. It ought never to occur save in exceptional emergencies and when absolutely necessary. If officers and troops

must be detached, the commandant should at least select them, in order that those may go whose services can best be spared. There is instruction of some kind assigned to every day of the school year. If officers and men are absent for a period, the part belonging thereto must generally go by default and not be given. No system deserving the name can possibly be maintained under such circumstances.

If the necessary officers' quarters and stables were constructed, another squadron would be desirable, and would very materially contribute to greater success in the prosecution and perfection of combined maneuvers.

When on the field the disproportion of cavalry to artillery is very marked, and planning of exercises which approximate to real conditions is thereby rendered difficult. This disproportion is due no more to the small number of troops than to the small size of the troops themselves.

In considerations which are affected by the actual number of men available for drills it should always be borne in mind that, under present conditions, seldom as many as 60 per cent of the men of an organization can be had for drill at any one time. With a troop aggregating 60 enlisted men a captain is exceptionally fortunate who can turn out 36 for drill, a thing so unusual that it becomes a subject of remark whenever it happens here, where all possible efforts are made to have every man at drill. Out of a cavalry command averaging, as this does, about 440 men, it is perfectly safe to say there will never be more than 240 available for field exercises. When these appear with 12 guns (the complement of three light batteries) the disproportion is very apparent. As a partial corrective of this disproportion I can not too strongly recommend the adoption, as soon as practicable, of the suggestion made by the Major-General Commanding the Army on April 2, 1892, viz:

That in order to make this training for field service (at United States Cavalry and Light Artillery School) as complete as possible, both arms be kept on a war footing in regard to armament, supplies, administration, and organization.

Pursuant to instructions, I had the honor of submitting in June, 1891, a proposed scheme of organization for this school, in which I recommended that the cavalry command be composed of twelve troops of cavalry, not more than two to be taken from any one regiment; but the War Department order, based on said scheme, prescribed that it should consist of one regiment of cavalry, as nearly as practicable. Supposing there was some reason for this wide departure from my recommendation, and being convinced the regimental organization would not serve the best interests of the institution, in my annual report of last year I suggested a compromise between the two plans (the one recommended and that adopted), viz, that the cavalry command consist of three squadrons from different regiments which suggestion was approved. Though that plan has some advantages, and notwithstanding it has been tried only one year, I nevertheless, now feel justified in returning to my original recommendation. The objectionable features it was feared might exist in the squadron plan have already become apparent. The two most urgent needs at present are that troops shall have the authorized complement of officers and contain a war strength of enlisted men. Under present conditions in the Army to keep three officers on duty with each of four troops of one regiment is next to an impossibility. It could hardly be expected, out of one regimental allowance alone, that four troops be maintained at a war strength. Since the total allowance of enlisted men for the cavalry arm is a fixed number and can not be

increased, the twelve troops of the school could be placed on a war footing only by a proportionate reduction of the allowance of all regiments. But seven of them, under the present system, would be deriving no benefit in return.

I recently addressed a communication to the Adjutant-General requesting that the troops in this school be maintained at an average of seventy men each, and in reply was informed that this could not be done without injustice to other regiments. This conclusion, in which I concur, makes it all the more appropriate that a plan be adopted under which, without injustice, these troops can be put on a basis commensurate with the importance of the work expected. I therefore have the honor to urgently recommend that, as the squadrons now here finish their tours of duty, the organization of the cavalry command be changed to accord with my original recommendation, viz: That it consist of twelve troops, all regiments being represented. My reasons are as follows:

(1) Troops serving here could then be maintained at a war strength without injustice to any regiment, since all would continuously participate in the benefits of the school.

(2) Each regimental commander would be enabled to offer the detail as a reward to that captain of his regiment who had displayed the most interest in and succeeded best with the instruction, discipline, and efficiency of his troop. Selection would then be an honor and would be worked for, thereby promoting efficiency.

(3) He could more easily spare sufficient officers to keep three on duty with each troop of his regiment here, and, being fewer in number, he would be able to select only the most suitable who have a natural taste for the work. This is a matter of no small importance.

(4) All regiments would sooner derive some benefit than under the present organization.

(5) The War Department would probably find it easier to annually arrange for the detail of one troop each from four regiments than four troops from one regiment. Probably fewer emergencies and difficulties would interfere with the ordering them here at a regular specified time.

The period of instruction should, however, remain three years (four troops being relieved each year, as now), instead of being for two, as suggested in my original scheme.

There are many recommendations in my report of last year which have not as yet received attention. I would respectfully renew them now, especially those relating to a topographical survey of the reservation and to an allowance of a general service clerk for permanent duty at the school.

The scheme of instruction, as approved, will be found hereto appended. The division of time so far as it affects instruction of the cavalry command is as follows:

January 10 to April 30: School of soldier, of the trooper, equitation, training horses, packing, guard duty, drills preliminary to target practice, signaling, elementary instruction in practical veterinary science, and horseshoeing. Also schools of the squad and troop in extended order, dismounted.

May 1 to August 15: Estimating distances, target practice, camping and troop drill.

August 15 to September 15: Squadron drill and signaling including field telegraphy, construction, and operation of line.

Instruction in stable management occurs daily; trumpet practice, the same (Saturdays and Sundays excepted); bearer drill and instruc-

tion in first aid to injured, weekly. All the rest of the instruction mentioned in the schedule is given between October 1 and December 20.

The reports¹ of the directors of the subschools will be found appended hereto. Attention is respectfully invited to the recommendations contained therein, which are concurred in by me.

Since the submission of my last report the following changes have occurred in the staff of the post commander:

First Lieut. Frank R. Keefer, assistant surgeon, U. S. A., left post January 16, 1893.

First Lieut. Merritte W. Ireland, assistant surgeon, U. S. A., left post April 22, 1893.

First Lieut. James M. Kennedy, assistant surgeon, U. S. A., arrived at post May 31, 1893.

First Lieut. Madison M. Brewer, assistant surgeon, U. S. A., arrived at post June 3, 1893.

In conclusion I desire to again testify to the close attention to duties and to the cheerful and valuable assistance rendered by all officers concerned with the duty of instruction. More loyal support than that accorded me could not be expected or desired.

Very respectfully, your obedient servant,

JAMES W. FORSYTH,
Colonel Seventh Cavalry, Commanding.

The ADJUTANT-GENERAL, UNITED STATES ARMY.

REPORT OF THE COMMANDANT OF THE UNITED STATES INFANTRY AND CAVALRY SCHOOL.

UNITED STATES INFANTRY AND CAVALRY SCHOOL,
Fort Leavenworth, Kans., August 1, 1894.

GENERAL: I have the honor to submit this my report of the operations and wants of the United States Infantry and Cavalry School for the first school year commencing September 1, 1893, and ending May 31, 1894.

The student class comprised the following-named officers: Second Lieuts. Robert C. Williams, First Cavalry; James J. Hornbrook, Second Cavalry; John P. Ryan, Third Cavalry; Edward D. Anderson, Fourth Cavalry; Louis C. Scherer, Fifth Cavalry; James G. Harbord, Fifth Cavalry; Ervin L. Phillips, Sixth Cavalry; John O'Shea, Seventh Cavalry. First Lieut. John C. Waterman, Eighth Cavalry. Second Lieuts. Joseph T. Crabbs, Eighth Cavalry; Mathew A. Batson, Ninth Cavalry; Winthrop S. Wood, Tenth Cavalry; Samuel D. Rockenbach, Tenth Cavalry; Dwight E. Holley, First Infantry. First Lieut. Charles H. Muir, Second Infantry. Second Lieuts. William H. Morford, Third Infantry; John S. Switzer, Fourth Infantry; John C. Castner, Fourth Infantry; William Brooke, Fourth Infantry; Edward Sigerfoos, Fifth Infantry; William H. Simons, Sixth Infantry; William Wallace, Seventh Infantry. First Lieut. John A. Perry, Eighth Infantry. Second Lieuts. Frank Owen, Eighth Infantry; Edmund Wittenmyer, Ninth Infantry; Arthur W. Yates, Ninth Infantry; Matt R. Peterson, Tenth Infantry; Edward A. Shuttleworth, Eleventh Infantry; Earl C. Carnahan, Twelfth Infantry; Peter C. Harris, Thirteenth Infantry; Frederick W. Fuger, Thirteenth

¹ Omitted.

Infantry; Charles R. Krauthoff, Fourteenth Infantry; Henry J. Hunt, Fifteenth Infantry. First Lieut. Walter A. Thurston, Sixteenth Infantry. Second Lieuts. Benjamin F. Hardaway, Seventeenth Infantry; Percival G. Lowe, Eighteenth Infantry; Jasper E. Brady, jr., Nineteenth Infantry; John Howard, Nineteenth Infantry; Wilson Chase, Twentieth Infantry; Munroe McFarland, Twenty-first Infantry; Ralph H. Van Deman, Twenty-first Infantry; Robert L. Hamilton, Twenty-second Infantry; Albert C. Dalton, Twenty-second Infantry; James E. Normoyle, Twenty-third Infantry. First Lieut. William Black, Twenty-fourth Infantry. Second Lieuts. John R. Seyburn, Twenty-fourth Infantry; John S. Murdock, Twenty-fifth Infantry.

Of the foregoing, the following-named officers reported at the dates opposite their respective names for preliminary instruction in mathematics.

Second Lieuts. William Brooke, Fourth Infantry, March 1, 1893; M. A. Batson, Ninth Cavalry, March 1, 1893; William Chase, Twentieth Infantry, March 1, 1893; Henry J. Hunt, Fifteenth Infantry, March 4, 1893; Earl C. Carnahan, Twelfth Infantry, March 5, 1893; Jasper E. Brady, jr., Nineteenth Infantry, March 13, 1893; Charles R. Krauthoff, Fourteenth Infantry, March 14, 1893; William Wallace, Seventh Infantry, March 15, 1893; John O'Shea, Seventh Cavalry, March 17, 1893; John Howard, Nineteenth Infantry, March 24, 1893; John S. Murdock, Twenty-fifth Infantry, March 25, 1893; W. H. Morford, Third Infantry, March 27, 1893; Percival G. Lowe, Eighteenth Infantry, April 5, 1893.

Lieut. Henry C. Le Comte, Swiss army, reported for duty at school January 1, 1894, to take a six months, course, as per letter of instruction from the Adjutant-General United States Army, under date of December 19, 1893. Was relieved from duty May 31, 1894, and furnished a certificate of proficiency in subjects pursued during that part of the course.

The following-named officers were relieved from duty at the school from time to time during the year and for various causes:

(1) Second Lieut. Joseph T. Crabbs, Eighth Cavalry, per paragraph 10, Special Orders 186, Headquarters of the Army, Adjutant-General's Office, August 15, 1893; relieved before commencement of school year, and did not join the class.

(2) First Lieut. Walter A. Thurston, Sixteenth Infantry, per paragraph 20, Special Orders 210, Headquarters of the Army, Adjutant-General's Office, September 20, 1893; at his own request.

(3) First Lieut. Dwight E. Holley, Fourth Infantry, per paragraph 3, Special Orders 33, Headquarters of the Army, Adjutant-General's Office, February 8, 1894; detailed as professor of military science and tactics at Mount Tamalpais Military Academy, San Rafael, Cal.

(4) Second Lieut. William Brooke, Fourth Infantry, per paragraph 3, Special Orders 49, Adjutant-General's Office, February 27, 1894; at his own request.

The student class as a body reported September 1, 1893, and entered upon the course of study prescribed, September 15, numbering at that time 46 members.

The subjects pursued by the members of the class from September 15 to December 31, 1893, were as follows: Department of military art, Wagner's Service of Security and Information; department of engineering, Johnson's Surveying; department of law, Davis' International Law; department of military hygiene, Lectures on Early Aid to the Injured.

During this time there was also much practical work accomplished in the departments of military art and engineering, which is fully set forth in the reports of the heads of those departments.

During the month of January, 1894, the semiannual examination of the student class in the foregoing studies took place.

The examination of the following-named officers was declared by the school staff unsatisfactory in the subjects set opposite their names, respectively: Second Lieut. John Howard, Nineteenth Infantry, military art and engineering; Second Lieut. William Brooke, Fourth Infantry, engineering; Second Lieut. W. H. Morford, Third Infantry, military art and engineering.

These officers were reexamined twenty days thereafter, in accordance with paragraph 48 of the school regulations, and having passed a satisfactory examination were declared proficient.

From January to May 31, 1894, the course of study consisted of the following subjects, together with much practical work in road sketching, reconnoissance, mapping, etc.: Department of military art, Wagner's Organization and Tactics, and Home's Précis of Modern Tactics; department of engineering, Richard's Military Topography; department of law, Cooley's Constitutional Law; department of cavalry, Dwyer's Seats and Saddles, and Cavalry Drill Regulations; department of infantry, Infantry Drill Regulations.

The annual examination of the student class in the foregoing subjects took place in June. The examination of the following-named officers was declared unsatisfactory by the school staff in the subjects set opposite their names, respectively: First Lieut. Frank Owen, Fourteenth Infantry, military art and engineering; Second Lieut. John Howard, Nineteenth Infantry, military art; Second Lieut. W. H. Morford, Third Infantry, military art, engineering, and constitutional law.

These officers were again examined twenty days thereafter, and the following-named officers were by the school staff declared deficient: First Lieut. Frank Owen, Fourteenth Infantry, in engineering; Second Lieut. W. H. Morford, Third Infantry, in military art, engineering, and constitutional law.

In accordance with paragraph 48, school regulations, a special report of the school staff in these cases has been submitted for the action of the Major-General Commanding the Army.

In the case of the first-named officer, I am satisfied that with steady application he could master the course without much difficulty. In the second case, I believe it to be exceedingly doubtful if the officer named could graduate at all.

DEPARTMENT OF MILITARY ART.

This department during the past year has been in charge of Capt. A. L. Wagner, Sixth Infantry, who succeeded Lieut. Col. Jacob Kline, Ninth Infantry, when the latter officer was relieved from duty at the school. Captain Wagner has brought untiring zeal to the accomplishment of the work in his department and with the help of his able assistant instructors has been remarkably successful in the instruction of the class. The works of which he is the author, viz, Service of Security and Information and Organization and Tactics, have been used as the text-books of the course, supplemented by a small portion of Home's Précis of Modern Tactics. This book will be dropped as soon as Captain Wagner's work is entirely completed.

For a detailed account of the work done in this department I respectfully refer to the report of Captain Wagner herewith.

DEPARTMENT OF ENGINEERING.

The department of engineering during the past year, as in the previous one, has been under the charge of Capt. W. D. Beach, Third Cavalry. Progress therein has been eminently satisfactory. Instructor and assistants have been untiring in their zealous efforts to improve this part of the course of study. The new text-book upon field engineering, arranged for the use of the United States Infantry and Cavalry School and for the Army, by the instructor and assistants of the department of engineering, is completed. It has been approved by the school staff, and it is hoped will meet with the approval of the War Department. It is intended to have it printed in time for use by the present student class.

I respectfully call the attention of the War Department to the great need of additional instruments for this department. The student class is steadily becoming larger and more instruments are required to carry on the instructions thoroughly. They are also very expensive, and the small sum appropriated to carry on the school (\$1,500 per year) should not be encroached upon for this purpose. If it be impracticable to have this amount increased as recommended elsewhere in this report, I would respectfully ask that a special appropriation of sixteen hundred dollars (\$1,600) be made for the purchase of the instruments required.

Reference is made to the report¹ of Captain Beach herewith, which details more fully the work of his department and its requirements.

DEPARTMENT OF INFANTRY.

The department of infantry has during the past year been under the supervision of Maj. J. T. Haskell, Twenty-fourth Infantry, he having succeeded Lieut. Col. Jacob Kline, Ninth Infantry, as instructor. A few days before the 1st of June last Major Haskell was ordered to the Indian Territory with three companies of infantry to repress disturbances. This was unfortunate, as it took the head of the department from his duties as instructor in the school just as the examination of the student class was about to begin.

The examination of this department was, therefore, conducted under the supervision of the senior assistant instructor, Capt. John F. Stretch, Tenth Infantry, whose report will be found herewith. Instruction in this department has consisted of recitations in the Drill Regulations and practical exercises with the troops.

DEPARTMENT OF CAVALRY.

This department has continued under the charge of Maj. C. C. Carr, Eighth Cavalry, and has been carried on with great efficiency by him and his able assistants.

The instruction consisted of recitations in Drill Regulations, Dwyer's Seats and Saddles, and practical exercises with the troops.

Major Carr's report¹ in detail will be found herewith, and is respectfully referred to.

DEPARTMENT OF LAW.

The instruction in this department, under the supervision of Capt. J. M. J. Sanno, Seventh Infantry, has been very complete, comprising Davis's International Law and Cooley's Constitutional Law. Consider-

¹Omitted.

able difficulty has been experienced in keeping instructors in this as well as in other departments, owing to the fact that they are generally taken from officers belonging to the troops or companies of the garrison, and are constantly liable to be detached and ordered away for other duty. This subject will be more fully discussed in another part of this report. Captain Sanno's report¹ of the work in his department will be found herewith, and is respectfully referred to for details.

DEPARTMENT OF MILITARY HYGIENE.

Maj. Calvin DeWitt, surgeon, United States Army, has been in charge of this department since the departure of Maj. John Brooke, surgeon, United States Army, now retired.

The course of instruction during the past year has been limited to lectures on the subject of "Early aid to the injured." The principal part of the course of military hygiene takes place during the second year.

REMARKS AND RECOMMENDATIONS.

I take pleasure in calling the attention of the War Department to the report of First Lieut. W. S. Scott, First Cavalry, the secretary of the school, which shows the great amount of work constantly in progress in his office. The position of secretary of the school has become of extreme importance, requiring great intelligence and unremitting labor. At no time has the place been filled more thoroughly and more to the satisfaction of all the officers connected with the school than by the present incumbent. The assistant to the secretary, Sergt. Philip F. Hoffman, Company H, Fourteenth Infantry, also merits commendation for efficiency and zeal. It is hoped that by the passage of the bill now before Congress the position held by Sergeant Hoffman may become permanent.

Great embarrassment in conducting the work of the school is occasioned by the loss of instructors and assistant instructors when in an emergency the companies and troops comprising the garrison are called out on detached service.

A number of the instructors and assistants in the departments of law, infantry, and cavalry belong to these organizations, and should they go with them the course of study in the school is seriously broken upon. Should they remain to attend to their school duties their companies and troops are short the number of officers necessary for efficiency.

I know that it has been impracticable to detail as many officers for such duty as was really needed, because of limited quarters, but that difficulty has now been partially remedied by the erection of new buildings, and it may be further mitigated by the detail of a few officers for duty in the department of law, who shall also be required to instruct in the departments of infantry or cavalry.

The departments of engineering and military art are not so much affected, as the instructors and assistants in those departments are as a rule detailed by orders from Washington.

To illustrate the necessity of the above I will state that within a few weeks three companies of infantry were ordered away from this post to the Indian Territory on detached service of indefinite duration, which took away the head of the department of infantry (there being already one vacancy in the department), and this but three days before the annual examination of the student class, thus crippling a very impor-

¹ Omitted.

tant department at a time when the presence of every instructor was needed.

The examination, however, was proceeded with, but was not completed (there being three officers to be reexamined) when five more companies were ordered to Chicago. This carried off the head of the department of law, as well as an assistant instructor therein, leaving but one assistant instructor in that department to complete the work. This is liable to occur at any time, and it can readily be seen how crippled the instruction of the student class might become in a sudden emergency.

In view of the above I would respectfully recommend and request that in addition to those already detailed, there be sent here, by order of the War Department, one first lieutenant of infantry and two first lieutenants of cavalry, to be assigned to duty as assistant instructors in the departments of infantry, cavalry, military art, or engineering, as the necessity of the case may require. By this means but few officers would be required from the garrison, and should the troops or companies be ordered away suddenly, the school work might still be continued by doubling duties, there being left for duty at least two in each department.

I believe the time is approaching when the usefulness of the Infantry and Cavalry School should be further increased by graduating a class of officers every year. The time required to complete the course of study remaining as now, two years, there would be about seventy officers in the two classes at any one time.

By sending thirty-five or forty officers to their regiments yearly from this school, having been thoroughly instructed in its course of study and its practical work, they would very soon make their influence felt throughout the service and would result in great benefit to the Army at large. It would probably enable every young officer of cavalry and infantry in due time to avail himself of the advantages of the school.

To carry out thoroughly this idea would require little else than additional quarters for the increased number of students. A building but little larger than the one erected last year, now called Schofield Hall, would be sufficient for the class, while the quarters now contemplated, when built, will probably suffice for the few additional instructors that might be required.

It is not impossible that the representatives of the National Guard whose business pursuits would permit, or new graduates of colleges having military instruction, selected by the executives of the States, might be authorized to take the course of instruction under such restrictions as should be deemed proper, they bearing their own expenses.

The remodelling of the quartermaster's storehouse contiguous to Sherman Hall for academic purposes is greatly desired. It is by far the most convenient arrangement yet suggested. It has been proposed by the Quartermaster-General to build an addition to Sherman Hall extending to the rear from the center. While I would prefer the former, yet it will undoubtedly do for the present, and it is hoped that in the near future the building originally desired may be obtained. The school will without doubt continue to be enlarged and the building will become essential to its efficiency.

Last winter a double set of officers' quarters took fire and before the flames could be extinguished were so badly burned that the building was pulled down. A double set of brick should be erected on this site, and it is strongly recommended that this be done at an early day.

I would again call attention to the buildings known as Thomas and McPherson halls. They have long since been condemned and should be replaced.

I have the honor to renew my recommendation of last year that measures be taken to increase the annual appropriation for the Infantry and Cavalry School from \$1,500 to \$5,000. It becomes more and more evident every year that the amount allowed heretofore is entirely inadequate to meet the absolute needs of the school. Its scope is widening every year, the student class is steadily increasing in number, more facilities are required by the various departments, and the library should be largely increased. Much printing is necessary for the current business of the school, many compilations and translations, as well as original work, pass through the school press, all of which must be paid from the appropriation. One thousand five hundred dollars is too small a sum to cover the expense of an institution of such increasing value to the military service.

It is also hoped that an appropriation may be secured to build barracks and stables for a battery of artillery and that a battery or, better still, two batteries of light artillery be made a part of the garrison. The three arms of the service being thus sufficiently represented, thorough instruction of the student class as well as of the officers of the garrison in maneuvers of the three arms combined can easily be obtained.

In all the work of the school during the past year I have had the hearty cooperation of every officer connected therewith, and whatever success has been attained has been largely due to their unceasing efforts, which I here gladly recognize.

I am, sir, very respectfully, your obedient servant,

E. F. TOWNSEND,
Colonel Twelfth Infantry, Commandant.

The ADJUTANT-GENERAL, UNITED STATES ARMY,
Washington, D. C.

REPORT OF THE COMMANDANT OF THE UNITED STATES ARTILLERY SCHOOL.

UNITED STATES ARTILLERY SCHOOL,
Fort Monroe, Va., August 25, 1894.

SIR: I have the honor to submit, for the information of the Major-General Commanding the Army, my annual report of the United States Artillery School. The report covers the second or last year of the prescribed course of instruction, embracing the subjects of steam and mechanism, electricity and mines, chemistry and explosives, military science, ballistic machines, and practical military exercises. During the fall and spring months the forenoons were given to lecture-room and laboratory instruction, and afternoons to practical artillery exercises; during the winter months, both forenoons and afternoons were given to lecture-room and laboratory instruction. The months of July and August were devoted to artillery firing practice.

STEAM AND MECHANISM.

Instruction in mechanism included the geometry of machinery, the elements of mechanism, the principles involved in the transmission of power, and problems in mechanical design.

In steam the course embraced the nature, nomenclature, and description of the steam engine, the indicator, indicator practice, the determination of horsepower, principles and equations of thermodynamics and their application, prominent types of modern engines, fuels and combustion, the steam boiler, theory, type fixtures, etc., and the solution of numerical problems. The department is equipped with boilers, engines, and types of various machines; also a collection of carefully constructed models of machines and their parts, and an extensive assortment of plates. The instruction was made as practical as possible, every student having the opportunity to operate boilers, engines, and other machines.

This instruction is of great value to an artilleryman, not only in giving him facility in reading machine drawings, and enabling him to appreciate the nature and features of apparatus and machines with which he has to deal daily, but the complicated nature of modern guns and carriages, and the application of steam and electricity to the means and methods of harbor defense, have made a knowledge of these subjects indispensable to him.

ELECTRICITY AND MINES.

The equipment of this department is improved from year to year as the limited appropriations of the school will permit, and the instruction of each succeeding class is consequently fuller and more complete than that of the preceding one. But our appropriation is entirely inadequate to providing some of the most costly machines, which are deemed essential to satisfactory instruction. The importance of this department is scarcely second to that of any other in the school, and it is earnestly hoped that the few prominent wants that are beyond the ability of the school appropriation to meet may be otherwise provided.

In addition to the general subject of electricity, special attention was given during the course to the practical management of artillery electrical appliances, the equipment and operation of mines, the principles of the dynamo, the electric motor, etc.

CHEMISTRY AND EXPLOSIVES.

This course assumes that student officers are already familiar with elementary chemistry, and instruction on that part of the subject is limited to such lectures and analytical work as are necessary to familiarize them with laboratory apparatus and methods, preparatory to the main object of the course, to wit, thorough instruction in manufacturing, testing and in the manipulation of explosives. Explosives of every class were made, tested, or analyzed by each officer, stress being laid on those adapted to military purposes and the service tests. Instruction was also given in densimetry and in the application of explosives to military demolitions.

The laboratory of this department of the school is thoroughly organized and very fully equipped for its special work. In addition to instructing the student class, the department aims to do its share of original investigation and research in this comparatively new field of study, and in the development of a military explosive that shall meet all the conditions of the service. Results thus far obtained are exceedingly gratifying, and encourage the belief that a satisfactory solution of the problem will soon be reached.

MILITARY SCIENCE.

Military science or the art of war was studied under the usual heads of organization, logistics, minor tactics, strategy, and battle tactics; the authorized text-books on these subjects being largely supplemented by notes compiled by the instructor from current military literature, of which the exchanges of the Journal of the United States Artillery afforded an ample resource, embracing as they do the military magazines and periodicals of nearly every country. He was thus able, in his treatment of the subject, to place before the class with appropriate explanations such changes in the application of principles as improved methods and the changing conditions of war have made necessary. Want of good and recent maps caused some inconvenience, but steps have been taken to supply this deficiency. While not an essential part of a curriculum of an artillery course, a knowledge of these subjects is indispensable to every military officer, and a clear and comprehensive idea of them can not well be acquired without the aid of an experienced instructor and the advantages of a well equipped school.

BALLISTIC MACHINES.

Instruction in the theory of ballistic machines and practice in the use of them was given in the afternoons of November. The Boulangé chronograph, the instrument now universally employed for taking muzzle velocities, was used for this instruction, and the Springfield rifle, loaded with a service cartridge, was used to break the screen circuits. In addition to the Springfield rifle a few shots were fired each day with a .30-caliber barrel with a crusher gauge attached, using a smokeless powder manufactured by Lieut. Willoughby Walke, instructor in explosives. In this way each student officer became familiar with the use and manipulation of the machines and apparatus, and the computations involved in taking velocities.

During the month of June experimental firing was done with the 8-inch C. R., for the purpose of obtaining data for ballistic deductions. These experiments were of the greatest possible practical value in showing the causes of error in using the gun, and the special care necessary to eliminate them. To the knowledge thus gained, more than to any other cause, is due the greatly improved results of target practice with this gun.

ENLISTED MEN'S DIVISION.

The division for noncommissioned officers continues to be a valuable feature of the school. The course embraces all subjects within the sphere of a noncommissioned officer's duties, and requires two years for its completion. All are required to take as much of the course as can be profitably taken by them; those completing it being given a certificate signed by the staff, those taking a part of it only a certificate signed by the instructor showing in what subjects they are proficient. The average attendance during the year was 60, of whom 6 completed the course, 25 completed the first year, and others were in various stages of progress. While noncommissioned officers are instructed as fully as practicable in the theories and principles involved, their instruction is made thoroughly practical, thus greatly enhancing their value and efficiency.

PRACTICAL MILITARY EXERCISES.

Besides considerable necessary work in moving guns and carriages from the wharf and depot to their emplacements, and mounting them, practical artillery instruction for the year embraced all exercises in

mechanical maneuvers prescribed in the programme of the school not completed the previous year, the service of the several classes of guns comprising the armament of the post, including field and machine guns, target practice with the 15-inch S. B., 8-inch C. R., 8-inch and 10-inch siege mortars, machine guns, and small arms. Artillery target firing, especially with the 8-inch C. R., was much better than heretofore, due chiefly to a better knowledge of the gun. Experience shows that this gun, if properly used, is accurate up to 4,000 yards at least, and well suited to target practice. All parts of the carriage and platform, therefore, should be made as reliable as possible. The large amount of firing done here for some years past by this and neighboring garrisons has, by natural wear and tear, considerably impaired the condition of some of the carriages and platforms. The pintles of the three 15-inch gun platforms at the end of the water battery, the pintle transom of carriage No. 1, and the right chassis rail of carriage No. 2 are all bent and otherwise damaged, and should be replaced before another year's firing. The four 8-inch C. R. are mounted on wooden platforms laid in the sand and have been in use for many years. Although repaired from time to time by the labor of the post, they are now in bad condition and should be replaced, two of them at least by concrete and masonry platforms, if practicable. The carriages of these guns are also defective. The front guides of the top carriages are frequently broken off, due chiefly to the unnecessary space between the guide and the flange of the chassis rail, thus permitting the carriage to jump, and the guide, striking the flange with a blow, is soon broken off. By making the flange fit with the least possible vertical play and strengthening the bolts, this defect would be remedied.

The post is not thoroughly equipped for ballistic work; the field apparatus, such as screens, frames, etc., should be renewed for continued work in this direction. A more accurate weighing scales than are at present provided should also be furnished for weighing large charges of powder.

From the foregoing it is seen that practical artillery instruction at the school is, and has been, limited to drills in the service of the several classes of guns at the post; to mounting, dismounting, and transporting heavy guns and carriages, and to target firing with individual guns, all of an obsolete type, and although not entirely useless, they fill a very subordinate place in a new armament. We have recently received, too late for use by the present class, one 8-inch B. L. R. and one 12-inch B. L. M., and I can not urge too strongly the necessity of providing the school at an early day with modern guns of every class, and with electric search lights, approved range and position finders, and all other auxiliaries pertaining to the defense of a modern coast fortress. While there is much valuable experience to be gained by the use of any gun, it is important that the artillery should be familiar with the use of our entire armament, and especially with the most important part of it. So many details have been introduced into the defense of a coast fortress that the most complete and perfect organization and training are essential to an efficient command and control of its various parts, in order to accomplish the common purpose. To develop such an organization and training should be the object, in part at least, of the drills and practical instruction at the Artillery School. Without a knowledge of all the means to be employed and a familiarity with the use of them such a system can not be devised nor training had in working it. I hope, therefore, that this post, garrisoned by eight batteries, and to which seven

other batteries come for their annual target practice, may be provided at an early day with all classes of guns and other accessories to a modern defense.

LIBRARY.

Additions to the library during the year have been limited to such recent military works as have been purchased from the school appropriation. It is a very valuable collection of military books, now numbering upwards of 10,500 volumes, and should be housed in a more commodious and fireproof building. The most important accession to the library is found in the exchanges of the Journal of the United States Artillery, numbering more than a hundred, and including the principal military magazines and periodicals of every country. These are invaluable to the school, and from a material point of view far exceed the slight draft that the Journal makes upon its resources.

BINDERY AND PRINTING PRESS.

The bindery and printing press are indispensable adjuncts to the school, contributing in no small measure to the necessities and efficiency of every department. The character of the work done by them compares favorably with that of the best establishments; the nature and amount were about the same as that of the previous year.

DISCIPLINE.

The discipline of the command is excellent. Desertions are so rare that they may be said to have practically ceased, and for several years past the command has been kept constantly at or near its maximum strength, by enlistments made at the post of the best class of recruits. A good gymnasium is much needed, both as a means of physical training, and a place where men can find recreation and amusement. For a large garrison the space is exceedingly contracted. Roads and walks are few, and no practicable open country is found except at considerable distance from the post. There would seem to be a propriety in expending some of the money saved in the recruitment of the garrison in providing for the improvement and comfort of the men.

SANITARY CONDITIONS.

Although the sanitary condition of the post is not considered good, the health of the command has been excellent. Frequent rainfalls have made the water supply abundant and of good quality, but as the supply comes from shallow wells, it is believed that great economy will have to be observed in the use of it during periods of drought. It is the opinion of competent judges that an artesian well bored to a depth of between 1,300 and 1,500 feet would afford a constant supply of good water.

A sufficient appropriation for the construction of a complete system of sewerage having now been made, this source of danger to the health of the post will soon be removed.

QUARTERS, ETC.

A new administration building has recently been completed to replace the old and decaying structure which has so long been used for this purpose. The new building provides convenient and comfortable facil-

ities for the administrative duties of the post and school. Two new sets of officers' quarters are now in process of construction, but at least six more sets will be necessary to provide quarters for all officers outside of casemates.

GENERAL REMARKS.

The school is in a healthful condition of progress and development. Energy and activity characterize all departments, and the student finds here the means and facilities for profitable study and the assistance of competent instructors. With few exceptions these advantages are much appreciated and elicit the best efforts of student officers. In the few exceptional cases, failure rarely results from want of ability, but from a lack of professional interest and other qualities, without which an officer is not likely to be of much value to the service. In such a case I believe the better plan would be to relieve the officer from the school and send him back to his regiment, and when he goes before a board for examination for promotion let his record go with him.

Very respectfully, your obedient servant,

ROYAL T. FRANK,

Lieutenant-Colonel, Second Artillery, Commandant.

The ADJUTANT-GENERAL OF THE ARMY,
Washington, D. C.

REPORT OF THE ADJUTANT-GENERAL.

ANNUAL REPORT OF THE ADJUTANT-GENERAL.

WAR DEPARTMENT,
ADJUTANT-GENERAL'S OFFICE,
Washington, September 28, 1894.

SIR: I have the honor to submit my annual report for the year ended September 1, 1894.

ADJUTANT-GENERAL'S DEPARTMENT.

By reason of the discontinuance of the geographical military divisions of the Army and of the reorganization of this office, two officers of the Adjutant-General's Department have been rendered supernumerary, and under section 1130 of the Revised Statutes Lieut. Col. Volkmar and Maj. Schwan have been assigned to duty as acting inspectors-general. The strength of the department will be reduced in 1896 by two retirements on account of age, at which date the number will meet the requirements of the service, as by a provision of the act of August 6, 1894, the number of officers in the Adjutant-General's Department is reduced from 17 to 15. I desire to bear testimony to the uniform efficiency and marked ability with which, without exception, the officers of the department and the officers of the line on duty in the Division of Military Information in this office have discharged their important and delicate duties.

THE DIVISION OF MILITARY INFORMATION.

Since the date of the last annual report from this office the personnel of the Military Information Division has remained unchanged, and much work has been accomplished by the various sections on the lines indicated.

The index cards of the military progress section have grown from 4,000 to nearly 30,000, and the contemplated publication of annual or semiannual reports of military progress for the information of the line of the Army is about to be inaugurated by the issue of Notes on Organization, Armament, and Military Progress, now in press. The book when it appears will be No. 4 of the information series. No. 1, on the Hawaiian Islands, mentioned in the last annual report, was followed during the year by No. 2, Organization of the German Army, and No. 3, The Organized Militia of the United States.

The last-mentioned work presents in concise form a summary of the condition and efficiency for service of the organized militia, prepared from special reports covering the encampment season of 1893.

At the request of the respective State authorities, officers of the Army were detailed for duty with the militia of thirty-three States during the encampment season of this year, and their reports will enable the Military Information Division to issue *The Organized Militia for 1894* at an early date.

All reports, so far received, of the inspections for 1894 indicate that the progress of the citizen soldiery of the Union is steadily upward in the direction of efficiency for active service.

The total number of officers of the Army detailed for service with the militia of the States during the year is as follows: 40 on temporary duty attending encampments; 27 on regular duty at State headquarters; total, 67 officers.

This number exceeds that of any previous year, and as all the details are made at the request of the respective State authorities, the increase in the number asked for indicates the value to the State troops of the services of officers of the regular Army.

In addition to the detail of officers, detachments of U. S. troops and in some cases entire organizations were encamped with the State troops when it was at all practicable to comply with requests for such service; and it is a pleasure to report that the relations existing between the Army and National Guard of the States evinces a degree of mutual interest and cordiality never heretofore attained. This is indicated in many ways—by expressions of thanks from governors of States for services rendered; in the favorable mention of the U. S. officers in State reports; and by the fact that last year, for the first time in the history of the War Department, the adjutant-general of every State and Territory rendered an annual report to the Adjutant-General of the Army of the strength of their respective forces.

In addition to the work above indicated, the military-progress section has undertaken to supply officers preparing essays for the lyceum course with statistics and information relating to foreign military organizations and kindred subjects, and has prepared with much painstaking and laborious research voluminous reports and memoranda, which have been sent out in response to the inquiries received.

A map of the seat of war in the East has also been prepared by this division, and will soon be issued to the Army.

The military attachés in foreign countries have been increased during the year by the assignment of a military representative to the legation in Mexico, and very recently by the appointment of Lieut. Michael J. O'Brien, Fifth Infantry, as military attaché at Tokio, with instructions to observe and report upon the course of the war in Korea.

It is gratifying to report that Congress has appropriated the sum of \$3,640 for the contingent expenses of the Military Information Division. This will enable the division to keep abreast of the times in procuring the latest military publications and other material necessary for its work.

I desire to emphasize the absolute necessity and the exact justice of urging upon Congress to appropriate more liberally for the State troops. Their officers and men go down into their pockets to serve their States and the country, and they sacrifice, besides their time, their recreation, and often their employment and means of support, in doing so. Their faithful and devoted service in restoring order and preserving peace in troublous times merits generous recognition in appropriations by the General Government.

THE MILITARY ACADEMY.

As it is desirable that the valuable plant at the Military Academy be utilized to its full capacity, it is recommended that a moderate increase in the number of cadets be authorized. It happens that a considerable length of time occurs between the dismissal of any cadet for deficiency or misconduct and the earliest date at which his successor can be appointed and entered. This period averages six months or more. To compensate for this loss of material, it is recommended that the present law be amended by giving to the President of the United States ten appointments at large each year, instead of the number now allowed, and that two at large from each State be nominated by the Senators representing such State in Congress.

The library has entirely outgrown the space heretofore allowed to it, and should be reconstructed and made fireproof. The band should be increased, as recommended by the superintendent of the Military Academy. It is recommended that the master of the sword have the rank, pay, and emoluments of a first lieutenant of infantry, and that the adjutant receive the pay of a captain, mounted.

The discipline at the Academy is excellent, and the institution is in a flourishing condition.

MILITARY COLLEGES.

The tabulated statement, submitted herewith, is compiled from the reports of the officers on duty as professors of tactics and military science at the 95 universities and colleges named. It shows that of a total average attendance of 20,688 male students capable of military duty, 12,569 were required by the collegiate authorities to enroll themselves as military students; that the total number that received military instruction during the last quarter of the scholastic year was 13,070, and that 530 students attended artillery drills and 11,720 infantry drills. The aptitude of the students for military instruction and the interest manifested therein by them is generally satisfactory, and it is noted that the interest taken by the several faculties in the military course is steadily increasing.

Disparity exists in the average number of pupils at these institutions receiving the benefit of military instruction, as shown by the following statement:

Schools instructing more than 600 students	1
Schools instructing between 500 and 600 students.....	1
Schools instructing between 400 and 500 students.....	1
Schools instructing between 300 and 400 students.....	2
Schools instructing between 200 and 300 students.....	11
Schools instructing between 100 and 200 students.....	44
Schools instructing between 75 and 100 students.....	16
Schools instructing between 50 and 75 students.....	11
Schools instructing less than 50 students.....	8

Thus there are 19 officers detailed at institutions where less than 75 students are instructed; and at 8 of these schools the military professor devotes his time to the instruction of less than 50 students. It seems unadvisable to continue details at small institutions.

To secure the largest benefit obtainable under the assignment of officers of the Army as professors of tactics and military science at colleges and universities, I am of opinion that the law should be amended to require not only that institutions shall have capacity to educate at the same time not less than 150 male students, but that there shall be actually present that number for instruction, to receive a detail.

From the table, submitted herewith, of the 46 high schools having the largest attendance, it will be seen that 20 of them have between 200 and 300 pupils; 11 have between 300 and 400; 9 have between 400 and 500; and at 6 of them the number of pupils ranges from 600 to over 800.

The high schools of Washington, D. C., a city of 230,000 inhabitants, furnish annually a battalion of about 400 cadets which receives military instruction from an officer of the National Guard of the District of Columbia. This instruction is far-reaching, as the cadets belong to families of all classes. During the latter portion of the past school year an officer of the Army stationed at Fort Omaha, Nebr., gave military instruction, voluntarily, to the students of the high schools of Omaha, a city of 140,000 inhabitants, and secured a voluntary enrollment of more than 200. These youths were organized into a battalion of four companies before the schools closed. Without the incentives of either arms, equipments, or uniforms, as these had not yet been obtained, the interest aroused was such as to secure an average attendance of 180 pupils.

The greater number of students instructed is a benefit to the community, and it is besides a benefit to the instructor, and consequently to the Government, for it familiarizes him with the handling of a larger body of men—a battalion generally—than he would find at his station, and fits him for regimental command in case of emergency.

RECRUITING SERVICE.

By General Orders, No. 33, August 16, 1894, from this office, important changes were inaugurated in the methods of conducting the general recruiting service.

It had been the custom for several years to collect recruits enlisted at the general recruiting stations in the large cities at what were known as general recruiting depots, located at Davids Island, New York Harbor; Columbus Barracks, Ohio, and Jefferson Barracks, Mo.

Recruits for the mounted service were sent to the latter depot and those for the foot service to the two former depots, and all newly enlisted men of the general service were retained at some one of these depots for three months, for the purpose of instruction, before assignment to companies and regiments.

The result of this depot system was to keep constantly from 1,200 to 1,500 men out of the ranks of the regiments undergoing preparatory instruction.

While the necessity under former conditions for thus assembling and instructing recruits destined for the frontier posts is not questioned, it is believed that under existing conditions regimental training is preferable to depot instruction.

For the past four years the special regimental recruiting service, through which men are enlisted for immediate service in regiments, has supplied a fair portion of recruits, and during the past fiscal year the men from this source, together with those enlisted at military posts, comprised rather more than one-half of the whole number of enlistments.

The principal changes effected by the general orders cited are: (1) the discontinuance of the three recruiting depots as such; (2) the forwarding of recruits direct from general recruiting stations to regiments whenever practicable; (3) the collection at four large garrisoned posts,

or early distribution to regiments, of recruits who are in excess of the requirements of the garrisons near the general recruiting stations.

These posts are the three formerly styled depots and Fort Sheridan. Under the new order the depots become rendezvous and the rendezvous stations.

It is the purpose of the department to retain recruits at the rendezvous only long enough for medical inspection and setting up drill, and by prompt assignments to regiments to keep the strength of the recruit detachment at each one so as not to exceed that of a company of infantry.

As a further step toward placing the recruit in his company as early as possible after enlistment, the special regimental recruiting service will be extended as rapidly as circumstances warrant.

Ten or more regiments and the Light Artillery Battalion are now nearly or quite self-sustaining and make few if any calls upon the general recruiting service to replenish their ranks. Until the number of such regiments is considerably increased, or more of the garrisons from the remote West brought into populous districts, it will not probably be advisable to reduce the general recruiting stations below the present number of thirty.

The new method of conducting the recruiting service may be regarded as in some measure tentative and subject to such modification and improvement as experience may demonstrate to be for the interest of the service.

By this reorganization there will be a large saving to the public treasury in the item of transportation. The existing appropriation for expenses of recruiting contemplates the payment therefrom of transportation of recruits from the point of enlistment at general recruiting stations to the several rendezvous. Such payments will hereafter be made by the Quartermaster's Department and the estimate for recruiting funds for the next fiscal year is reduced accordingly.

The number of general recruiting stations to be maintained from time to time is a matter to be determined by experience. With the revival of business throughout the country a marked falling off in the number of applicants at recruiting stations is to be expected. Again, the ultimate effect upon enlistments of the recent legislation (act approved August 1, 1894) making the term of enlistment three years instead of five years and requiring that first enlistments shall be confined to persons who are citizens of the United States or who have made legal declaration of intention to become citizens thereof and who can speak, read, and write the English language can not be accurately foreseen. Naturally, the reduction of the term will tend to stimulate enlistments, and the other provisions will operate to reduce the number who are eligible for enlistment. Probably it will be safe for the present to conclude that the results will about offset each other.

In October, 1893, there were in operation 36 general recruiting stations. No new stations have been opened since, and 6 stations have been closed from time to time during the year, as it became apparent that they could be dispensed with in the interest of the service.

The general recruiting stations now in operation are located as follows:

Three in Chicago, Ill., 2 in New York City, and 1 each in Boston and Springfield, Mass., New Haven, Conn., Albany and Buffalo, N. Y., Newark, N. J., Philadelphia, Harrisburg, and Pittsburg, Pa., Cincinnati and Cleveland, Ohio, Indianapolis and Evansville, Ind., Detroit,

Mich., Milwaukee, Wis., St. Paul and Minneapolis, Minn., San Francisco, Cal., Seattle, Wash., St. Louis, Mo., Louisville, Ky., Nashville, Tenn., Lynchburg, Va., Baltimore, Md., and Washington, D. C.

INDIAN ENLISTMENTS.

The whole number of Indian soldiers enlisted up to June 30, 1894, was 1,009; of these 46 were enlisted during the fiscal year ending that date.

During the past year 5 Indian companies have been discontinued through discharges and other casualties. There are now in service 10 Indian companies, namely, 6 troops of cavalry and 4 companies of infantry.

GENERAL RESULTS.

The effect of the great business depression was felt as early as August, 1893, in the greatly increased number of men making application to enter the Army, and the opportunity thus afforded for securing exceptionally desirable recruits was taken advantage of by restricting enlistments to the best class of applicants, careful selection being made from the large numbers offering.

Notwithstanding this precaution, it became necessary during the fall and winter of 1893 to refuse all applications for original enlistment, and at other times to confine enlistments for the cavalry, white and colored, and for the colored infantry, to former soldiers.

The recruits enlisted during the fiscal year ending June 30, 1894, besides meeting all current losses, added about 500 men to the strength of the Army. The total number of enlistments in the Army during that year (excluding those not embraced in the legal limit of 25,000 men) was 7,817, classified as follows:

For the general recruiting service.....	3, 824
For the special regimental recruiting service.....	1, 104
For the departmental recruiting service (at military posts).....	877
For the battalion of engineers (at military posts).....	149
	<hr/>
	5, 954
For regiments, detachments, etc. (at military posts).....	1, 863
	<hr/>
Total.....	7, 817

Of the 7,817 accepted recruits 4,926 were native born and 2,891 of foreign birth; 7,352 were white, 419 colored, and 46 Indians.

Reports from regimental commanders set forth the fact that of those whose terms of service will expire during the coming year two-thirds have declared their intention to re-enlist.

Reports show that the recruiting officers making the 5,954 enlistments embraced in the first four items of the foregoing list rejected 27,531 applicants (82 per cent of the whole number seeking enlistment) as deficient in some of the necessary qualifications, either physical, mental, or moral, which, in itself, indicates that such officers as a rule have taken all proper precautions to prevent the enlistment of men unfitted from any cause for the duties of a soldier. Notwithstanding the present high standard of qualifications and the careful application of the most rigorous tests, both as to physical and moral qualifications, not a few undesirable men have succeeded in entering the service. It is believed, however, that the number of these is smaller than during any recent year, and that the provisions of the new law excluding from

original enlistments aliens and persons who can not speak, read, and write the English language will have the effect of still further reducing the number of this class of men who gain admission to the Army.

ARMY REGULATIONS.

Since the Regulations for the Army of 1889 were published numerous amendments have been promulgated as the result of new legislation or the necessities of the service. What the Army needs is not a revision of the code—which would evidence inevitably the individuality of the reviser and be subject to objections—but simply the preparation of a new edition of the Regulations as already amended in the orders of the Secretary of War as issued from General Headquarters.

A board of officers—composed of Lieut. Col. Henry C. Corbin, Maj. Arthur MacArthur, who was relieved October 15, 1893, by Maj. John C. Gilmore, and Maj. John C. Babcock, officers of the Adjutant-General's Department on duty in this office—was convened in May of last year to consider this important subject.

The board, in its report, submitted the following recommendations:

1. All regulations of 1889, unamended at date of publication, to be preserved in their purity and incorporated in the new book. By time and association these paragraphs have acquired a certain fixed meaning and are presumably well understood. To modify or change them without some specific reason is simply to invite the possibility of misunderstanding. They should be inflexibly adhered to, even to the extent of preserving inaccurate punctuation and faulty diction. If in any instance, pending the compilation, occasion arises out of some actual necessity for the modification or change of a paragraph, the amendment should be accomplished in the usual way, and the result announced in general orders. Amendment under the guise of revision should not be permitted under any circumstances.

2. All amended regulations announced in general orders since the publication of the original text in 1889 to be substituted for the paragraphs amended, the latter to be eliminated. The inflexible rules prescribed for original regulations to obtain in respect of amendments.

3. The laws, general orders, and decisions touching the permanent administration of the Army to be arranged, paragraphed, and inserted. The necessary authority to this end involves a considerable discretion; it can, however, be limited to the minimum by requiring rigid adhesion to original texts wherever it is possible.

These recommendations, fully concurred in by the Major-General Commanding the Army, were approved by the honorable Secretary of War June 29, 1893, and thereupon First Lieut. John T. French, jr., Fourth Artillery, an officer peculiarly qualified for the work, was assigned to duty with the board. The work in its several stages of progress has received the critical examination of the board and myself, and those portions pertaining to the staff departments, the scrutiny of the chiefs of such departments, and has then been submitted to the Major-General Commanding. His final action may be expected at an early day, and thereupon the fair copy of the manuscript will be completed and an index prepared, and the whole submitted to the Secretary of War.

PAY OF ENLISTED MEN OF THE LINE.

The recent legislation limiting enlistment in the Army to persons who are American citizens will undoubtedly result in filling the ranks with young men of ability and good character, who, selecting the profession of arms as their future career, will willingly embrace its onerous duties and responsibilities.

The efficiency of the line of the Army depends upon its personnel, and the fact needs only to be stated that the greater part, at least, of the best material of which an army is composed should be in the fighting line. Under the present law the first sergeant is underpaid. He is a most important noncommissioned officer. Without him the best efforts of the captain would fall far short of success. So the corporal receives less pay than the private on extra duty, and the sergeant-major than a first sergeant, who is inferior to him in rank. The pay table of enlisted men of the line requires readjustment, and recommendation for legislation in this matter will be submitted hereafter.

RETAINED PAY.

The first section of the act of June 16, 1890, provides for the retention of \$4 per month of the monthly pay of each enlisted man of the Army during the first year of his service, payable to him only at his discharge from the Army, unless forfeited by misconduct involving dishonorable discharge.

As indicated by the title of the law, this provision was intended to prevent desertion, and to some extent protect the Government against loss resulting from the discharge, within a year, of men found unfit for service by reason of physical or moral defects successfully concealed by them at their enlistment. Its further provision that the sums so retained shall be treated as deposits and shall bear interest from the end of the first year of the soldier's enlistment was, theoretically, in the interest of the men. The practical working of the law has failed to work the beneficial results anticipated.

In reply to a call from this office on all the regiments of the line for an expression of the views of both regimental and company commanders on this subject, a very large majority express the opinion that the retention of \$4 of the soldier's pay during the first year of his service leads to much dissatisfaction, and in many cases to positive hardship. The recruit, as a rule, needs more ready money than the old soldier. Till he learns the economies of the veteran, he is, in comparison, extravagant and wasteful. And besides, upon entering the military career he must have a complete equipment of military clothing. If his allowance be overdrawn, as it is likely to be, his pay is stopped at the pay table. As a result, the man is disappointed and discouraged. Often impressed with the belief that the Government has been guilty of breach of contract, he feels himself justified in abandoning the service.

The good of the Army demands, in my opinion, the immediate repeal of a law which works bad results oftener than good ones.

GOVERNMENT HOSPITAL FOR THE INSANE.

The following is a list of the persons committed to the Government Hospital for the Insane, under the order of the honorable Secretary of War, from September 1, 1893, to September 1, 1894:

Officers of the U. S. Army	1
Officers of the U. S. Army (retired)	1
Enlisted men of the U. S. Army	22
Enlisted men of the U. S. Army (retired)	1
Late volunteer soldiers	1
Military convicts	2

THE ADJUTANT-GENERAL'S OFFICE.

The legal organization of the clerical force of this office remained unchanged until July 1, 1894, at which date, in anticipation of contemplated legislative action, it was reduced to its present proportions, viz: 1 chief clerk, 12 clerks of class 4, 14 clerks of class 3, 13 clerks of class 2, 58 clerks of class 1, and 7 clerks of class \$1,000.

On the same date the branches and divisions of the office, under the orders of the War Department, dated May 15, 1894, were consolidated into four divisions, designated as follows: Mail and Record, Correspondence and Examining, Miscellaneous, Military Information; and, for the greater convenience and dispatch of business, new quarters were assigned to the greater part of the clerical force.

The reports on calls to the Pension Office, the Auditors of the Treasury, and the several bureaus of the War Department, on pension and kindred claims, is exhibited in the following table, and it is noted with much satisfaction that, notwithstanding the disturbing elements of change of location of the office, necessary shifting of voluminous records, files, etc., no call remained unanswered September 1, 1894:

Bureaus.	On hand September 1, 1893.	Calls re- ceived.	Reports fur- nished.	On hand September 1, 1894.
Commissioner of Pensions.....		9,065	9,065	
Second Auditor.....		3,730	3,730	
Third Auditor.....		49	49	
Fourth Auditor.....		8	8	
Second Comptroller.....		26	26	
General Land Office.....		18	18	
Quartermaster-General.....		12	12	
Commissary-General.....		13	13	
Paymaster-General.....		344	344	
Surgeon-General.....		211	211	
Miscellaneous.....		728	728	
Total		14,204	14,204	

Prior to the transfer of the Confederate Archives Division, the special work of its subdivision had been completed. This subdivision had been organized for the preparation—under the requirement of the act of May 13, 1892—of a “general card index of the books, muster-rolls, orders, and other papers preserved in the Confederate Archives Office,” and prosecuted its labor with uniform zeal and industry highly creditable to all engaged. The index of the Confederate muster-rolls alone consists of 1,563,000 cards contained in 852 file boxes.

The order prescribing the card record system, to be applied to all the records of any bureau, contained a minute description of the manner of making a correct and complete record from the time an official communication is received up to and including final disposition. The illustration of its working was limited to the several entries heretofore made in the “letters received” and “letters sent” books, but afforded no guide for the correct record on cards of the statistical information necessary in many cases to be furnished on call to the Major-General Commanding or the Secretary of War, or for the proper determination of a question—as, for instance, the actual enlisted strength of the Army on a given day; number, names, and stations of officers on recruiting service; details at colleges; applicants for staff appointments; number of Congressional districts unrepresented at the Military Academy, etc., all incident to and absolutely necessary for the proper conduct of an administrative office.

With great industry and good judgment on the part of the principal clerks suitable forms for statistical cards were devised, the change of location and the moving of large masses of records effected, and the new system put in successful operation without any appreciable delay of business and to my entire satisfaction.

In closing this report, I take sincere pleasure in recording my appreciation of the general intelligence, zeal, and efficiency of the clerks of this office. Their loyal service, cheerfully rendered, without regard to official hours, during the reorganization of the office and at all times when required, justly entitles them to great commendation.

Respectfully submitted.

GEO. D. RUGGLES,
Adjutant-General.

Hon. DANIEL S. LAMONT,
Secretary of War.

Tabulated statement from reports of professors of military science and tactics, showing average attendance of students at universities and colleges.

Universities and colleges.	Average number of students.		Whole number of male students capable of military duty.	Number required by the institution to be enrolled as military students.	Total number that received military instruction during the last quarter.	Attendance at—		Aptitude of students.	Students.	Faculty.
	Over 15 years of age.	Under 15 years of age.				Artillery drill.	Infantry drill.			
Alabama Agricultural and Mechanical College, Auburn.	187	.....	170	170	170	18	156	Good	Good	Good.
University of Alabama, Tuscaloosa County	129	.....	117	117	136	.....	71	Very good ..	Considerably increased.	Two members favor a strict military discipline.
.....	70	15	65	65	65	.....	59	90 per cent.	89 per cent.	75 per cent.
.....	504	56	233	233	307	.....	226	Good	Satisfactory ..	Satisfactory.
.....	554	.....	438	397	397	.....	285	Excellent ..	Good	Do.
Cal.	75	35	75	75	100	.....	70	Good	do	Good.
.....	85	.....	60	55	68	.....	58	do	Satisfactory ..	Satisfactory.
New	2,257	.....	2,201	140	68	.....	49	Excellent ..	Good	Fair.
Haven, Conn.	80	.....	60	(*)	32	.....	21	Good	Fair	Friendly.
Delaware College, Newark	90	1	90	90	162	.....	72	do	do	Only a few take interest in the drill, but all appreciate the discipline.
Florida Agricultural College, Lake City .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Excellent.
North Georgia Agricultural College, Dahlonega	81	0	71	71	80	.....	63	Ordinary ..	Very good	Excellent.
Gordon Institute, Barnesville, Ga.	170	215	120	(1)	100	.....	94	Very good ..	All that can be desired.	All that can be desired.
Middle Georgia Military and Agricultural College, Milledgeville.	63	141	76	76	76	.....	64	Good	Good	Good.
University of Idaho, Moscow	125	.....	61	61	61	.....	51	do	do	Do.
University of Illinois, Champaign	499	.....	475	201	201	.....	100	Excellent ..	Excellent ..	Satisfactory.
Knox College, Galesburg, Ill.	521	.....	140	50	87	.....	70	Very good ..	Marked	Very good and encouraging.
Northern Illinois Normal School, Dixon	600	.....	350	(*)	126	.....	14	Fair	Fair	Fair.
Western Military Academy, Upper Alton, Ill.	37	12	40	49	49	.....	42	Good	Satisfactory ..	Very marked.
DePauw University, Greencastle, Ind.	806	.....	500	162	130	.....	20	do	Excellent ..	Good.
Vincennes University, Vincennes, Ind.	31	1	32	32	32	.....	32	do	do	Excellent.

Optional.

Voluntary.

* Not given.

Tabulated statement from reports of professors of military science and tactics, etc.—Continued.

Universities and colleges.	Average number of students.			Whole number of male students capable of military duty.	Number required by the institution to be enrolled as military students.	Total number that received military instruction during the last quarter.	Attendance at—		Aptitude of students.	Interest manifested by—	
	Over 16 years of age.	Under 16 years of age.	Total.				Artillery drill.	Infantry drill.		Students.	Faculty.
Purdue University, Lafayette, Ind.....	567	.....	567	469	159	172	23	112	Average.....	Fair.....	About same as in other departments.
Cornell College, Mount Vernon, Iowa.....	177	.....	177	160	180	137	.....	110	Very good.....	Very good.....	Very good.
Iowa State University, Iowa City.....	200	.....	200	196	155	155	9	115	Excellent.....	Very satisfactory.	Highly satisfactory.
.....	189	1	189	80	78	78	8	74	Very good.....	Very good.....	Very good.
.....	222	.....	222	212	None.	144	.....	74	Good.....	Encouraging.....	More than heretofore.
.....	350	.....	350	161	None.	81	.....	66	.....do.....	Fair.....	Good.
.....	179	18	197	164	145	145	18	96	.....do.....	Good.....	Satisfactory.
.....	107	18	125	120	119	119	.....	107	.....do.....	Much improved.	Very much improved.
.....	155	6	161	154	161	161	8	184	.....do.....	Good.....	Fair.
.....	114	.....	114	112	112	112	.....	103	Very good.....	Very good.....	Very good.
.....	127	20	147	130	130	130	.....	112	Very fair.....	Satisfactory.....	Satisfactory.
.....	96	14	110	103	110	103	16	83	Good.....	Considerable.....	Very favorable.
.....	141	.....	141	135	141	125	.....	130	Excellent.....	Excellent.....	Excellent.
.....	1,157	.....	1,157	900	225	225	.....	193	Very good.....	Slight.....	Slight.
.....	64	53	107	106	106	101	.....	90	Good.....	Fair.....	Reasonable.
.....	118	4	122	120	120	122	30	96	Great.....	Great.....	Great.
.....	189	.....	189	176	(*)	161	.....	125	Good.....	Good.....	Good.
.....	842	.....	842	214	None.	90	.....	81	Excellent.....	Excellent.....	Satisfactory.
.....	1,726	.....	1,726	576	295	202	.....	190	Good.....	Good.....	Fairly good.
.....	190	1	191	187	191	187	24	191	.....do.....	.....do.....	Good.
.....	500	10	510	420	174	141	.....	86	.....do.....	.....do.....	Do.
.....	300	816	875	380	242	265	.....	114	.....do.....	.....do.....	Do.
.....	179	110	309	60	183	183	.....	106	Above average.	Keen.....	Very satisfactory.

	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000
Missouri Military Academy, Mexico, Mo																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		

Tabulated statement from reports of professors of military science and tactics, etc.—Continued.

Universities and colleges.	Average number of students.			Whole number of male students capable of military duty.	Number required by the institution to be enrolled as military student.	Total number that received military instruction during the last quarter.	Attendance at—		Attitude of students.	Interest manifested by—	
	Over 15 years of age.	Under 15 years of age.	Total.				Artillery drill.	Infantry drill.		Students.	Faculty.
Baylor University, Waco, Tex.....	400	75	475	226	None.	66	.....	58	Good	Good and increasing.	Satisfactory.
Austin College, Sherman, Tex	112	3	123	105	122	122	.....	103	Excellent...	Very satisfactory.	Do.
.....	146	.....	146	140	94	94	6	59	Good	Encouraging	Encouraging.
.....	106	2	110	90	61	66	.....	157	Fair	Good	Good
.....	165	.....	165	155	156	140	20	111	Good	do	Improving.
.....	62	.....	62	62	52	50	17	40	Excellent...	Excellent.....	Excellent.
.....	141	14	155	88	84	60	6	78	Fair	Fair	Considerable.
..... College, Blacks.	216	.....	216	202	190	199	38	172	Excellent...	Excellent.....	Very good.
.....	173	.....	173	175	173	175	6	110	Good	Considerable	Considerable.
..... Va	40	10	50	50	48	46	.....	43	do	Satisfactory	Satisfactory.
.....	120	.....	120	115	(?)	109	.....	92	do	Very good.....	Very great.
.....	102	.....	102	38	36	38	.....	36	Fair	Good	Satisfactory.
.....	135	.....	135	167	65	65	17	60	Excellent...	Poor, but increasing.	None.
.....	1,100	.....	1,100	800	197	197	.....	179	do	Fair and increasing.	Satisfactory.
State University of Wisconsin, Madison.....	33	.....	33	20	31	31	16	20	Good	Considerable.	All that could be desired.
University of Wyoming, Laramie.....											

* All physically able.

High schools.	Number of pupils.			Total.
	Insecond-ary grade.	Prepar- ing for college classical course.	Prepar- ing for college scientific course.	
California:				
Los Angeles.....	176	8	118	302
Oakland.....	320	13	19	352
San Francisco.....	340			340
Colorado:				
Denver.....	303	78	65	446
Connecticut:				
Hartford.....	356			356
New Haven.....	298	111	116	525
District of Columbia:				
Washington.....	361	36	18	415
Illinois:				
Chicago (south division).....	208	15	25	248
Chicago (west division).....	291	40		331
Kansas:				
Topeka.....	152	87		239
Kentucky:				
Louisville.....	319			319
Louisiana:				
New Orleans.....	250			250
Maine:				
Portland.....	188	39	5	232
Massachusetts:				
Boston (Latin school).....	491			491
Cambridge.....	223		22	245
Latin school.....	123	123		246
Fall River.....	178	44		222
Lowell.....	234	30	17	281
Lynn.....	166	34	4	204
Newton.....	232	78	32	342
Salem.....	159	30	12	201
Somerville.....	190	73	14	277
Springfield.....	187	15	7	209
Worcester.....	333			333
Michigan:				
Ann Arbor.....	344	50	250	644
Minnesota:				
Minneapolis (central).....	291			291
St. Paul.....	202	45	120	367
Missouri:				
Kansas City.....	303	40	80	423
St. Louis (Central).....	377	35		412
Nebraska:				
Omaha.....	232	18	37	287
New Jersey:				
Newark.....	369	50		419
New York:				
Albany.....	348	22		370
Brooklyn.....	451	80	80	611
Buffalo.....	390	46		436
Elmira.....	172	6	56	234
Ithaca.....	167	6	49	222
Rochester.....	296	140	50	486
Ohio:				
Cincinnati (Woodward).....	262	30		292
Cincinnati.....	406	49	351	806
Cleveland.....	537			537
Columbus.....	275			275
Pennsylvania:				
Philadelphia (Central).....	701			701
Pittsburg.....	338	10		348
Reading.....	166	20	10	206
Rhode Island:				
Providence.....	323	121		444
Wisconsin:				
Milwaukee.....	272			272

REPORT OF THE INSPECTOR-GENERAL.

REPORT

OF THE

INSPECTOR-GENERAL OF THE ARMY.

**WAR DEPARTMENT,
INSPECTOR-GENERAL'S OFFICE,
*Washington, D. C., October 1, 1894.***

SIR: The single general inspection of the entire military establishment, and the several inspections of money accounts, and all the special inspections made by officers on duty in this department, have been reported upon in detail from time to time to the responsible authorities with all the completeness that could be attained. The clearly defined criticisms of inspectors are usually acquiesced in; and, as a rule, adequate remedial measures have followed as far as within the power of the local authorities to apply them; and while the same information may reach you from the sources more directly responsible, the gratification may also be permitted to the inspectors to state that the professional instruction, harmony, military ardor, and discipline of our Army to-day, within the limits of its numbers and lack of organized reserves, is probably up to the best of any civilized nation in the world. It is unquestionably better fed, barracked, and clothed than at any other period of its existence, and as thoroughly contented as a just administration can insure or we can reasonably expect of men under effective, rigid, and reliable military discipline and instruction.

MILITARY COLLEGES.

At the close of the fiscal year 1894 there were 98 educational institutions having officers of the Army detailed as professors of military science and tactics, against 85 at the close of the previous year. Details were withdrawn during the year from 8 colleges and added to 21 others, and the officers were changed at 28 other colleges, so that of the 98 on duty exactly one-half began their work at the beginning or during the school year. Of the 21 new colleges, several had no military department before the arrival of the military professor, and others were not well organized. In spite of these changes, and other unfavorable conditions, the school year just closed has been the most successful in the history of these details, not only in the military enrollment, but also in the interest manifested, the enthusiasm created, and the results accomplished; and it is submitted that every encouragement and support should be extended to a system which has worked so well and is improving so rapidly, and every proper effort be made to develop it, and

no better opportunity can be expected for many years to come to establish the proper principles for creditable military instruction, and obtain the best possible results for the students and the institutions, as well as adequate and creditable work for the professors of military science and tactics, than now.

After the scholastic year had begun, the act of
Details of Officers. November 3, 1893, increased the number of officers of the Army that may be detailed to colleges from 75 to 100, and provided that when retired officers are so detailed they shall receive the full pay of their rank, the colleges in either case receiving the benefit of issues of ordnance and ordnance stores. So the line is depleted by more than enough officers for thirty companies and the country should, and generally does, receive its fair *quid pro quo* for its outlay.

The Military Professors. Eighty-seven lieutenants and eleven captains are detailed. Perhaps the number of captains can be increased without detriment to the service, as many more are now available than formerly on account of skeleton companies. These commands are usually larger than companies, and with less assistance in conducting them, and demand more tact, persistence, and discretion to make the most of them. The extra bar and higher rank have their effect on the students, and the maturer thoughts and wider experience of our captains make them particularly useful in the universities of highest grade where theoretical instruction in the art and science of war is the predominating feature of the military department. These duties are of great and growing importance, well deserving every proper recognition; and a captain's bar is no indication of decreasing efficiency, but the contrary.

Sixty-five military professors are infantry officers, 21 cavalry, and 12 artillery. The officers, as a rule, are members of the faculty in full standing, and with few exceptions are heartily supported in their work by the college authorities. Many of them act most acceptably as instructors or professors of other branches than their own; the thoroughness of their methods and mental training being a benefit in any course of study. They seem to have performed their duties in a thoroughly painstaking manner, and at most of the institutions their qualifications and abilities are highly spoken of by the college presidents, who also express a generous appreciation of the benefits derived from the careful and soldierly annual inspections by officers whose regular business is inspection duty.

Character of Institutions. The institutions that are cooperating with the Government in instructing our young citizens in the art and science of soldiering are of the most varied character, ranging through all the various grades from commercial schools educating only for business to universities empowered to confer all degrees, and including preparatory schools, military academies, scientific institutions, industrial schools and colleges, etc. The utility of details at some of the twelve colleges where the enrollment in the military department falls short of 75 men may possibly be questioned.

Enrollment Students. The statistics here presented relate to 96 colleges, an increase from 84 considered in last year's report. The reports show a total enrollment of 33,437 male students, a gain of more than 5,000 over the number reported last year. Of this number 16,889 were enrolled in the military departments, slightly more than 50 per cent of the total number, and only 68 men less than the aggregate authorized strength of our 30 infantry and artillery regi-

ments. Last year the military enrollment was but 15,010, but that number was nearly 53 per cent of the male students in attendance. The tenor of the reports show clearly that this falling off in percentage of military students can not be attributed to lack of interest manifested, but rather to the stringency in the times and the sudden increase of new institutions, which have hardly become fully aroused to the situation and adjusted their military department to their personnel and curriculum. The average number of students over 15 years of age in the military departments of these 96 colleges was 12,706. Though barely half of the matriculates at these institutions are receiving the full benefits of the military instruction, still, when young men capable of bearing arms are constantly under competent military instructors, and 20,000 more are at the same time more or less influenced by this instruction, it is clear that the United States, by engrafting military instruction on the curriculum of the leading educational institutions throughout the country, have inaugurated and are successfully pushing a wise and remarkable system of military education, which deserves the utmost development and all the attention now being given to it by the War Department. Of course, the instruction must be as excellent as the system, and no more so.

There has been a marked improvement this year; and
The Military Course. many of the colleges recognize the importance of the military department and allow the same credit for theoretical or practical military instruction as for other educational work. The variations in the theoretical work may seem too broad to be entered upon in an annual report, extending as they do from the study of the highest questions of strategy or logistics at some institutions, to mere recitations in the drill book as the entire theoretical course at others. But perhaps a few illustrations may be submitted concerning the practical course which necessarily is within narrower limits.

Facilities for Practical Work. Five colleges, located in large cities, have no drill grounds whatever, and the practical instruction is necessarily limited to drills in close order in armories or drill halls. Others are cramped for room. And in colleges located in the country, where there are ample facilities for problems in minor tactics, target practice, extended order movements, etc., the provisions for indoor work during inclement weather are occasionally not adequate. The officers, however, readily adapt themselves to the existing conditions and accomplish all that can be expected of them with their limited time and facilities. If students are excluded from the officer's control except for a few hours in a single year or two, all can understand that perhaps not very much of permanent value may be driven home to stay, especially if the whole course is rather condescendingly treated as a matter suited only to the lower classes. Any correct idea of true military discipline may seem especially difficult to acquire under such circumstances. About half of the colleges have target ranges and some have facilities for gallery practice. The progress and improvement in such instruction has been gratifying, and the laggards are very few and seem awakening to the better requirements, and in the meantime are consciously on the defensive. So most of the objectionable features are gradually correcting themselves without excessive friction.

Military Organizations. Among the student organizations there are found 1 regiment of two 4-company battalions; 2 regiments of two 3-company battalions each; 3 battalions of 6 companies; 2 battalions of 5 companies; 30 battalions of 4 companies; 14 battalions of 3 companies; 29 battalions of 2 companies; 24 bands; 11

drum and bugle corps; 19 separate companies; 16 artillery detachments, and 5 signal squads. In addition, at many of the colleges there are artillery and signal detachments and some cavalry, whose members are included also in the infantry organizations.

The combined organizations could make a formidable, remarkably intelligent, and fairly instructed army, and if mustered into service in time of national or local danger would constitute a most important auxiliary to the regular and militia forces. The discipline and mobility of such commands, to which every aspiration of patriotism and hope is given, may deserve further development where not regarded as impracticable. Does not such a recapitulation indicate new possibilities of safe-guarding our nation, and the part these young Americans will play in the coming day of national stress and danger?

Drills. At one-third of the colleges there have been no drills except in infantry. With the limited time allowed at most of them, it would be folly to attempt any extended instruction in cavalry, artillery, or signaling; but even the slightest acquaintance with such matters is very instructive and of the greatest assistance in the emergencies of war. It is like the possibility of further extended acquaintance after a mere introduction. Yet several colleges have well-drilled signal and artillery detachments, and at more than one military college more than 200 cavalry drills have been given. Saber exercises have been held at fifteen colleges, and at one, where fifteen hours a week are devoted to practical instruction, there have been ten mounted artillery drills. Many of the organizations are well drilled in extended order. A liberal supply of blank cartridges should be issued to colleges having facilities for this important drill.

Target Practice. Forty-one colleges have had small-arms target practice, in which 3,244 students have participated. Over 116,000 shots have been fired. There has been no target practice with artillery reported, though, of course, it would be interesting and instructive, and perhaps may be possible, at least with sub-calibers, after the navy manner, in some localities.

Field Exercises. Exercises in the field, consisting of practice marches, camping, and the practical solution of problems in minor tactics, have formed an important feature of the instruction this year at many institutions. Such exercises are of great interest and of much practical value to the students. At one college the military professor took the cadets on a practice march of ten days' duration. It is reported to have done the cadets a great deal of good. The photographs of the camps and fieldwork of several of these institutions are certainly interesting illustrations of the excellent military instruction and the manly character of the students.

At several colleges the students have been allowed an encampment this year, usually at their own expense, although in some cases the colleges have paid the bills. Tentage has frequently been furnished by the State; Pennsylvania being particularly liberal in this respect. Two colleges from that State encamped together for a week, engaged in practical military work; and one of the military professors reports that more was accomplished during that one week in the most important practical military work than in a whole year at college. Several college organizations have encamped with State troops. One battalion of students attended the State encampment and interstate drill and remained five days, performing the usual camp duties. Only those cadets were taken who paid their own expenses. This encamp-

ment served to awaken enthusiasm, as shown by the fact that about sixty of the best drilled cadets have voluntarily formed a special company and are drilling three hours a week in addition to the regular drills. The visits and encampment of several corps of cadets to the World's Fair at Chicago should not escape mention.

A special feature of military training was introduced at one of the colleges, with highly beneficial results, by devoting one day in each month exclusively to military exercises, enabling matters to receive attention which require more than an hour or so to get under proper headway. The corps is marched or transported to suitable ground for maneuvers, and the entire day can be devoted to practical fieldwork and problems in minor tactics. Although perhaps not equal in value to a regular encampment, this method of instruction is nevertheless effective and inexpensive.

Problems in minor tactics have been given at a large number of colleges having facilities for their practical solution, and at others they have been solved theoretically on maps. The problems included the attack and defense of positions, outposts, patrols, advance and rear guards, train guard, grand guards, repulsing a night attack, guarding a road, forcing a bridge, reconnoissance of a position, passing a defile, preventing the building of a pontoon bridge, crossing a river in transports, etc. Such problems are of great practical value and should be encouraged in every way; for instance, by a more liberal supply of blank ammunition.

Ceremonies. Guard mountings, dress parades, reviews, and inspections are frequently held at many of the colleges. Usually where there is a battalion organization the national flag is carried at battalion drill and ceremonies, and occasionally the State battalion colors.

Uniforms. At twenty-eight colleges some of the cadets have not yet procured uniforms, and although this applies particularly to the colleges recently added, still many of the older institutions are seriously puzzled about this question. Even the simplest uniform is important for military instruction, like the weapons and accouterments; and every soldierly requirement can and should be adequately met.

Inspections. The cadets look upon the inspection as the military event of the year. It increases their interest; helps the esprit de corps; causes better care of Government property; is of material assistance to the military professor; and is highly pleasing to the college authorities. It is reported that the annual inspection is almost vital, and is certainly essential to efficiency. Practically without exception the military professors speak in strong terms of the beneficial effect of these inspections on all concerned, and the college presidents vie with the professors in their expression of hearty approval.

WEST POINT MILITARY ACADEMY.

The annual inspection of the Military Academy at West Point was made August 8 by Col. R. P. Hughes, inspector-general, who speaks in high terms of the excellent management of this institution. Its records show that the battalion of cadets is 56 short of the number authorized by law, which is due to the failure of Representatives to make the usual recommendations for appointment. Some of the Congressional districts have had no representative at West Point for sev-

eral years. In the State of Illinois the record shows that nine of the twenty-two authorized appointments have not been filled. The Ninth district of Tennessee appears to have had no representative at West Point for over five years. When we consider the large expense of maintaining the necessary instructors and garrison of this school, it is most important that the Corps of Cadets should be kept as nearly complete as possible.

The inspector invites attention to the usual special details. Among the recommendations made by the last inspector of this institution, to which you have already given your attention, are an increase of the number of horses furnished for instruction; the removal of many old buildings now on the reservation, as a matter of economy and good sanitation; the removal of many of the fences as a needless expense; and the establishment of a crematory for burning the post offal.

In the essential matter of instruction it seems evident that there should be some co-ordination between the whole military school system, so as to avoid waste work and offer the highest and most complete instruction any military student may be capable of. The service schools are under the command of the Major-General Commanding, and are covered in the report to him.

MANEUVERS.

Officers charged with the theoretical instruction of cadets at military or other institutions of learning have occasionally stated that during a short period of encampment the cadets learned lessons of greater practical value than they acquire in a year's instruction within college grounds. Remarks of such character, based upon actual experience, can not be gainsaid. Troops may be brought to an admirable state of perfection in marching and drilling; but if they lack the experience and mobility that can only be had in camp under warlike conditions they may be far from ready to meet the foe effectively. The distinctive quality of soldiers is their ability to act efficiently in masses under all circumstances, according to the will of one man. Individually the unsoldierly may be superior, but collectively the power of rigid discipline is recognized.

It is gratifying to note, therefore, that encampments are receiving increasing consideration and attendance among our national forces. But this is not sufficient. The *raison d'être* of the soldier and the Army as a whole must not be lost sight of; and it may, within definite limits, be as essential for lower grade officers to understand and be able to perform the duties assigned those of higher grade as it is for officers of high rank to be familiar with every duty of those under them, whether applied to the conditions of peace or war.

Some States have already inaugurated consolidated encampments of their military forces with beneficial results. It is only a step further to bring the troops of several States into one camp, and it is earnestly recommended that this be done. With the present rate of shrinkage in the ranks of our veteran officers who are able to handle large bodies of troops, there will soon be no one left possessed of experience gained in the late war. Our standing Army is too scattered to permit the concentration of a corps into one camp without great expense, but never too much so to be able to attend in limited numbers a consolidated encampment of several States. Money could not be expended for a better and wiser military purpose.

ARMY DISBURSEMENTS.

A summary of the reports of the inspections of the accounts of disbursing officers of the Army during the fiscal year shows as follows:

Balance taken up		\$4, 006, 495. 08
Receipts from Treasury	\$48, 103, 316. 44	
Receipts from sales and other sources.....	1, 839, 021. 03	
		<hr/> 49, 942, 337. 47
Transfers from other officers.....		11, 718, 886. 19
		<hr/> 65, 667, 718. 74
Total to be accounted for.....		
Disbursements.....	\$49, 842, 941. 71	
Deposited to credit Treasurer of the United States	970, 777. 34	
		<hr/> 50, 813, 719. 05
Transfers to other officers	10, 760, 575. 00	
		<hr/> 61, 574, 294. 05
		<hr/> 4, 093, 424. 69
Balance to be accounted for.....		
Distributed as follows:		
United States Treasury	\$2, 881, 336. 58	
United States depositories.....	1, 163, 965. 22	
Cash on hand	48, 122. 89	
		<hr/> 4, 093, 424. 69

This summary as compared with that of last year, shows a net increase of \$2,612,193.61 in the amount of disbursements inspected, arising thus:

Increased disbursements:

Judge Advocate-General's Department.....	\$16. 62
Medical Department	369, 573. 58
Engineers Department	2, 203, 260. 69
Ordnance Department	716, 950. 23
Recruiting officers	10, 749. 42
National Home for Disabled Volunteer Soldiers	889, 350. 86
	<hr/> 4, 189, 901. 40

Decreased disbursements:

Adjutant-General's Department	\$744. 33
Quartermaster's Department	456, 380. 52
Subsistence Department.....	200, 291. 92
Pay Department	844, 179. 20
Miscellaneous.....	76, 111. 82
	<hr/> 1, 577, 707. 79
	<hr/> 2, 612, 193. 61

From the above analysis it appears that the disbursements on account of the regular military establishment were about \$1,500,000 less than the previous year. The increase in the amount expended by the Medical Department arises from the periodic payment on account of artificial limbs, under Revised Statutes 4787 and 4791. The number of claims which fell due during the fiscal year 1894 were largely increased by the law of March 3, 1891, which changed the term of payment from five to three years.

The increase in the disbursements of the Engineer Department is traced to the appropriation for the improvement of rivers and harbors, and that of the Ordnance Department to those providing for the armament of fortifications.

The disbursements reported on account of the National Home for Disabled Volunteer Soldiers and of recruiting officers, appear for the first time in these reports.

While the amount of disbursements reported has increased over \$2,500,000, the total amount involved or required to carry on these transactions exhibits an increase of not quite \$700,000. This shows

that the care exercised in the management of funds noted in last year's report has not abated.

The relation between the entire amount involved and the disbursements, transfers, deposits in the general treasury, and balances retained during the two fiscal years may be stated thus:

	1893.	1894.
Disbursements	0.727	0.760
Transfers between officers .....	.191	.163
Deposits in general treasury .....	.025	.015
Balance retained .....	.057	.022

It is noted that the percentage of the amount of funds transferred between officers has been reduced during the last year, and yet it would seem that the amount transferred during the last fiscal year (\$11,718,886.19) might still be considerably reduced this year with advantage to the service in economy of clerical labor and shortening the period between the issue of the funds from the Treasurer and its actual use by the final disbursing officer.

Were it not for the large balances held by the disbursing officers of the National Home (33 per cent of the amount involved in their accounts) the balances of 1894 would show an improvement over those of 1893.

The per cent of final balances to the average of total monthly disbursements has shown a gradual reduction since 1891, when the per cent was 186; in 1892, it was 99 per cent; in 1893, it was reduced to 94, and in the last fiscal year, excluding the transactions of the National Home, it was still further reduced to 89 per cent.

That this margin of funds in the hands of disbursing officers is yet capable of further reduction, without detriment to the service, will appear from the following table showing the percentage of final balances to the average of total monthly disbursements, for four fiscal years, in each of the principal disbursing departments:

Department.	1891.	1892.	1893.	1894.
Engineer	293	104	82	75
Ordnance	191	124	105	115
Quartermaster's	130	53	120	135
Subsistence	102	99	39	73
Medical	82	102	106	83
Pay	57	48	90	66

The efforts of the departments, as shown by the above table, to carry out the instructions contained in the circular letter from the Treasury Department, of July 25, 1892, and Army Regulations, 676, can doubtless be made equally successful by all if desired. The amount disbursed by the departments showing the lowest averages was over two and one-half times as large as that disbursed by the others.

Economy in the use of the public funds, as well as in the disbursement, deserves every attention. The more promptly and direct the disbursing officer can receive funds from the Treasury the less opportunity there will be for any portion to lie idle, and the less expense will be attendant upon the handling of the funds. The Treasury Department is the only depot needed for the distribution of funds in peace times, and can do it directly through the regular channels without a lot of subsidiary invoices and receipts being made out by middlemen. The statements submitted by inspectors show that in one department

during the fiscal year, over 48 per cent of the amount received from the Treasury passed through the hands of other officers before it reached the disbursing officer, and in that department the ratio of the balance in the hands of officers to the amount disbursed exceeds that of any other, which seems to create a lot of unnecessary clerical work, and allow a lot of money to be idle in transit.

Under General Orders, No. 91, of 1893, and General Orders, No. 4, of 1894, the acting commissaries of subsistence at the posts named therein are authorized to keep public funds on hand as contemplated by Army Regulations, 680. Possibly authority could be granted in the same manner to the acting assistant quartermasters at the same posts to keep such amounts on hand as may be necessary, and thus come within the requirements of the regulations. Necessity has no law, but it can be legally recognized rather than encourage irregularities.

The total number of inspections made, including statements submitted under Army Regulations, 967½, and verified by the inspector, was as follows:

Officers.	Inspections.
233 General staff officers' accounts	604
219 Post staff officers' accounts	811
37 Other line officers' accounts	48
1 Retired officers' accounts (Soldiers' Home)	1
4 Volunteer Soldiers' Home accounts	4
494	1,468
Average number of inspections for each staff officer	2.6
Average number of inspections for each post officer	3.7

It appears from the following statement that 851 inspections (including 270 accounts of post officers), involving \$61,771,531.22, were made by the officers of this department, and 479 inspections (including the accounts of 27 staff officers), involving \$2,617,326.55, were made by other officers; or a total, including the accounts verified under Army Regulations, 967½, of 1,468 inspections, involving \$65,667,718.74. It may be noted that the great bulk of these inspections are made by the officers on duty in this department in the several inspection districts, and the great majority of these inspections are effected by officers on the spot, and therefore without any cost in mileage.

Department.	Officers inspected.	Total.		By officers of Inspector-General's Department.		By other officers.		Under Army Regulations, 967½.	
		Inspections.	Amount involved.	No.	Amount.	No.	Amount.	No.	Amount.
Adjutant-General ..	13	30	\$2,815.77	28	\$2,673.40	1	\$27.37	1	\$115.00
Judge-Advocate-General	8	23	585.16	22	577.61	1	7.55		
Quartermaster-General:									
Staff	53	149	12,462,651.03	131	11,873,834.34	11	318,581.56	7	270,235.13
Post	106	390	1,354,447.61	130	459,306.63	213	763,794.43	47	131,346.55
Subsistence:									
Staff	24	66	2,111,917.06	59	2,030,586.30	8	23,074.39	4	58,256.37
Post	113	421	1,055,858.65	140	376,915.69	239	616,091.62	42	62,851.34
Medical	8	18	919,727.44	16	775,414.14			2	144,313.30
Pay	30	85	19,835,594.66	76	18,943,875.58	9	891,719.08		
Engineers	63	155	20,681,570.61	152	20,495,310.89			3	186,259.72
Ordnance	32	72	4,947,752.76	69	4,529,834.97	1	3,408.38	2	414,509.41
Recruiting	30	35	12,837.43	5	1,523.31	1	622.17	29	10,691.95
National Home Dis. Vol. Soldiers	4	4	1,336,949.57	4	1,336,949.57				
Miscellaneous	10	20	945,010.99	19	944,728.79			1	282.20
Total	494	1,468	\$65,667,718.74	851	\$61,771,531.22	479	\$2,617,326.55	138	\$1,278,860.97

The effort to have these inquiries embrace all the money appropriated and disbursed, as required by law, has never come nearer to absolute success, and has produced the results that are usually anticipated from thorough inspections. There may still be phases of the matter that might deserve closer scrutiny if the force of the department was not so limited.

NATIONAL HOME FOR DISABLED VOLUNTEER SOLDIERS.

It is hoped that nothing but good and the kindest feelings may result from the closest relation between these old soldiers and the War Department.

In compliance with the provisions of the act of March 3, 1893, "that the Secretary of War shall hereafter exercise the same supervision over all receipts and disbursements on account of the volunteer soldiers' homes as he is required by law to apply to the accounts of disbursing officers of the Army," orders were issued by you directing Lieut. Col. H. W. Lawton, inspector-general, to proceed to these homes and make the inspection contemplated. Under these orders the branch home located at Togus, Me., was inspected October 26, 1893; at Hampton, Va., October 30, 1893; at Dayton, Ohio, November 9, 1893, and at Santa Monica, Cal., November 23, 1893. Owing to the condition of Colonel Lawton's health at this time, he was obliged to discontinue the inspection for that fiscal year. On the branch homes inspected Colonel Lawton made the following report:

DENVER, COLO., *December 7, 1893.*

SIR: In compliance with your suggestion that I shall submit for use of subcommittee on appropriations suggestion show savings can be effected at National Home for Disabled Volunteer Soldiers, I have the honor to state as follows: In so far as I have inspected these homes, viz, the Togus, Me., Hampton, Va., Dayton, Ohio, and Santa Monica, Cal., it is my opinion that no further appropriation need be made for any additional original construction. The plant is at present amply adequate for present necessities or for any apparent increase of inmates. Sufficient appropriation under the head of construction for the necessary repairs is therefore all that is required, with the following exceptions:

At the Togus Branch a rock crusher might well be supplied, and an estimate for an electric lighting plant might be considered, as I was informed by the governor that on the reservation was a water power sufficient for the purpose of driving the dynamos, and as I believe there is paid annually about \$7,000 for electric lighting; such a plant might be found economical.

At the Southern Branch the completion of the work now in progress.

At the Central Branch the completion of the gas holder now under construction; and

At the Pacific Branch, Santa Monica, there should be constructed one double set of officers' quarters, the mess hall should be extended, a kitchen and bakery should be constructed, a substantial means of lighting provided, and a Holly system of water supply established.

Beyond these, so far as I was able to observe, nothing beyond repairs need in the future be considered. In case of an increase of inmates temporary barracks will suffice. The hospital estimates should be liberally appropriated for, and in fact the institutions must soon become large hospitals. I recommend the absolute discontinuance of any appropriation under the head of "farm." The money thus expended will purchase more than is produced, and if it is found convenient or necessary to conduct a farm let it be done under the direction of local officers from the post fund, this fund defraying the expenses and receiving the benefit of all profit.

The pay rolls should be carefully scrutinized and the force largely cut down. A great deal of work, particularly the clerical, is duplicated and cumbersome. Much work which is now paid for, such as funeral escorts, firing parties, etc., should be a matter of detail without compensation, and labor should be made compulsory. Admissions should be more restricted. None should be admitted unless physically unable to earn a living or subsist upon their pension, and examinations should frequently be made and able inmates discharged. Discharge and furlough should be encouraged. The institutions seem too easy to get into and too hard to get out of.

All appropriations, except for hospital, should be limited in the act, as, for instance, "for the purchase of fuel for the Central Branch, not to exceed," etc.; "for 1,000 feet 1½-inch pine timber for repair of mess hall, not to exceed," etc.

Pensions to inmates should be absolutely forfeited to the United States during their occupancy of the Home. Any having dependent relatives entitled to pension should receive such proportion as would be due them in case of death of pensioner.

The general management and honesty of administration is beyond criticism. The officers generally were efficient, active, energetic, and devoted, and I believe many of them would be glad to see reform introduced.

H. W. LAWTON,
Lieutenant-Colonel, Inspector-General.

INSPECTOR-GENERAL UNITED STATES ARMY.

The disbursements and accounts were also inspected, and while the methods in use were not so clear and concise as those prescribed for the Army, they showed an honest and definite intention to faithfully account for the trust imposed. Possibly a less cumbersome system, coupled with a less divided responsibility, would result in greater economy of expenditures.

From the recent legislation in the act of August 18, 1894, relating to the general management of funds appropriated for these homes, it would appear that Congress had taken a deep interest therein. This legislation may be summarized as follows:

The transfer of the "posthumous fund" to the "general fund."

To confine the disbursement of the appropriations for the several branches (with certain exceptions) to the treasurers thereof, and that the excepted articles be shipped directly to the Home.

To limit the disbursements to the specific objects for which the appropriation was made.

To consolidate in one appropriation the several appropriations for clothing for the several branches.

To prohibit the use of the appropriations for construction and repairs for the construction of any new building.

The enumeration of the salaries of the officers and employees of the Board of Managers, the amounts that may be disbursed for traveling expenses, clerk hire, outdoor relief and incidental expenses.

To provide for a general treasurer, who shall not be a member of the Board of Managers, and who shall give bond to the United States to account for all public money and property which he may receive, and that the branch treasurers shall bond to the general treasurer.

To authorize the use of "penalty envelopes" for official correspondence.

To authorize credits from sales of property to be disbursed.

To classify the officers and employees and fix a rate of pay for each class, and permitting no employee to be borne upon more than one roll.

To allow mileage, at 7 cents per mile, in lieu of traveling expenses, to officers of the Home not members of the Board of Managers.

No compensation to be paid to members of the Board of Managers for service, except the president and secretary.

An annual inspection of the Home, its records, disbursements, management, discipline and condition, by an officer of the Inspector-General's Department, who shall submit a report to be transmitted to Congress.

As these provisions were adopted after a full conference between the Board of Managers and the Appropriation Committees, it is believed that, they generally meet with the approval of the Board. It is pleasing to note that Gen. J. O. Black, representing the Board before the Appropriation Committee, said there was no objection to the Secretary of War causing a thorough inspection, and that enactment ought to be adopted.

The consolidation of the several appropriations for clothing will simplify the accounts, and is in line with previous requests of the president of the Board of Managers.

The use of the penalty envelope should result in a material saving to the Government and great convenience to the conduct of the correspondence of the Homes, and some relief from keeping this lot of petty accounts, while official envelopes are to be used only for what the absolute necessities of the service warrant.

The provision that the general treasurer shall not be a member of the Board of Managers seems, on general principles, to be a very proper one, as a disbursing officer should have no voice in the approval or authentication of his own accounts.

The requirement that the general treasurer should bond to the United States emphasizes the position taken by Congress since the act of March 3, 1875, that the funds appropriated for the support of this Home are public funds.

The supervision of these receipts and disbursements, as already clearly established by law, has been conducted in excellent accord between the Treasury and War Departments, and all that it seemed wise to attempt has been accomplished with fair success, and this beneficial and considerate legislation, it is believed, effects still greater improvements, promptness, and security where needed among the satisfactory methods already referred to, and often demonstrated during the many years this institution has served its purpose so well.

The act of March 3, 1891, provides that the accounts of the Home, "as also all receipts by said Home from whatever source, shall, in addition to the supervision now provided for, be reported to and supervised by the Secretary of War." But only a portion of the receipts held by the fiscal officers of the Home seem to be reported under the requirements of that act.

The accounts of the acting treasurer of the Home for the first, second, and third quarters of the fiscal year ending June 30, 1894, have been examined in this office, and sent to the Second Auditor of the Treasury for his action, and in each case the acting treasurer was furnished with a copy of the exceptions taken. The accounts of the acting treasurer for the quarter ending June 30, 1894, were not received here until September 19, and it is not possible at this date, therefore, to give a complete statement of the receipts and disbursements of the treasurers for the entire fiscal year.

The appropriation account may be stated as follows:

Balance in Treasury July 1, 1893.....	\$335, 905. 01	
Amount of appropriations.....	2, 953, 563. 89	
Received by transfer settlement.....	2, 498. 86	
Unexpended balances deposited.....	100, 003. 46	
Total to be accounted for	3, 391, 971. 22	
Remitted to disbursing officers	\$2, 897, 243. 89	
Paid on Treasury settlements.....	3, 927. 33	
Covered into surplus fund.....	309, 834. 67	
	<u>3, 211, 005. 89</u>	
Balance in Treasury June 30, 1894	180, 965. 33	
Under the following appropriations:		
Support of National Home for Disabled Volunteer Soldiers, 1893	\$110, 724. 00	
State or Territorial Homes for disabled soldiers and sailors, 1893	12, 638. 25	
Support of National Home for Disabled Volunteer Soldiers, 1894.....	57, 603. 08	
	<u>180, 965. 33</u>	

The disbursement account, as shown by the accounts and vouchers received to include the quarter ending March 31, 1894, shows as follows:

Balance in hands of disbursing officers July 1, 1893	\$119, 239. 24
Remitted from Treasury to June 30, 1894	2, 897, 243. 89
Received from other sources to March 31, 1894	50, 480. 48

Total to be accounted for	3, 066, 963. 61
Disbursements to March 31, 1894:	
Support of National Home for Disabled Volunteer	
Soldiers.....	\$1, 840, 085. 26
State or Territorial Homes	304, 962. 40
	<hr/> 2, 145, 047. 66

Balance due March 31, 1894.....	921, 915. 95
Remitted from Treasury, not taken up to March 31, 1894.	\$614, 480. 33
Balance in hands of disbursing officers March 31, 1894....	307, 435. 62
	<hr/> 921, 915. 95

The adoption since last report of new forms and methods has improved the system of accounts and brought them nearer to the prescribed rules governing the rendition of public accounts. The larger part of the exceptions now reported is on account of informalities that may be corrected by the filing of required contracts, bills, and other evidence of like character to sustain the vouchers. The law requiring the keeping of balances on deposit is more generally observed, and also that requiring the application of the funds solely to the object for which they were appropriated. A more prompt settlement of these accounts could be made if it were possible for the general treasurer to render his accounts monthly, as now required by law of the branch treasurers, who make over 86 per cent of the disbursements on account of the Home and whose vouchers and accounts are hardly less, but rather more, complicated and voluminous.

As the president of the Board of Managers is no longer the disbursing officer of the Home, it might expedite the accounts if so much of the Treasury regulation as required that vouchers relating to all other funds than those of the Branch Home be approved, before payment, by the Board of Managers, be amended so as to direct that such vouchers be approved by the President, in the same manner as Branch Home funds are approved by the governor. This would avoid the delay consequent upon holding the general treasurer's vouchers until a meeting of the Board could be called to act on such vouchers. The amount now on the Treasury's books is understood to have been brought from \$7,229,243.29 to \$2,977,323.97 since the assignment of these matters to this Bureau.

RENEWAL OF FORMER RECOMMENDATIONS.

Some progress seems to have been made in this direction, and its desirability needs no argument; nor does it affect the age to which well-trained and desirable veterans can be retained as the backbone of the regular establishment. This is a question at the beginning of army service, and a great benefit has been done the service by General Orders No. 87 of 1891, reducing the age for original enlistments from 35 to 30, and General Orders No. 38 of 1890, permitting the purchase of horses for the mounted service at 4 years of age. The marked irregularity in the size and color of company horses has been greatly improved.

The want of veterinary hospitals at our larger cavalry posts has been greatly felt. Horses are subject to as many diseases and accidents than men, and proper

Younger and better
Men and Horses.

Veterinary Hospital.

facilities for their treatment should be afforded. It will prolong their life of usefulness, and materially reduce the large number of unserviceable animals that annually find their way to the auctioneer.

Target Practice. This instruction, though highly developed in our Army—perhaps at the cost of almost too much time in comparison with other important branches—is still lacking in one or more particulars, such as practice at movable targets, or simulating the situation and strained requirements of battle.

Travel Ration. Occasional hot food on long trips has been recommended, as well as sleeping (tourists) cars. It promotes contentment and increases endurance, and will relieve the men from a great deal of the discomforts of travel. In this, as in many other matters, there have been great improvements since it was first mentioned, and universal and complete relief is anticipated and already practically assured.

Encourage Deposits. The smallest sum now accepted by the Pay Department is still too high for the average private, and a reduction from the present amount to \$1 has been suggested. A reduction will doubtless tend to an increase in the number of depositors and to greater thriftiness and the qualities which accompany thrift.

Post Schools. Schools of any kind are perhaps better than none at all, and those we possess have done much good; some, like Fort Monroe, doing great good: but post schools have not in all cases been as satisfactory as was hoped. To awaken interest, insure uniformity, and improve the system, it is necessary that suitable text-books for our military schools and a proper recognition, supervision, and curriculum be officially adopted. The text-books and curriculum can readily be prepared by a board of officers; and certificates showing the instruction received could be given to those who are proved to be proficient, and so exempt them from further attendance wherever the soldier may go; and it would be well to have more definite and regular supervision assigned to an officer at each department headquarters. No civilized army, probably, has a less effective school system for enlisted men than ours; though we should certainly be able and willing to do as much in this line as any other country does. The recent legal requirement that recruits must now have the ordinary information of a child of thirteen years of age may in a few years make the special effort now needed less necessary, or open a more beneficial field of instruction in matters more directly relating to the life of a soldier, whether this instruction be given by the teacher or officer in charge.

Barrack Lights. Barracks should be bright, cheerful, and inviting, and this can not be so long as the amount of light depends on something other than the rooms to be lit.

INSPECTIONS UNDER PARAGRAPH 955, ARMY REGULATIONS.

Depots of Supply. The main depots, consisting of the quartermaster, commissary, medical, and recruiting depots, have been inspected during the past year, the results of which show that they are efficiently and creditably administered, and that the quality of the recruits and supplies is satisfactory. Up to within a not remote period these establishments have been considered a necessity, as they would probably be again in case of war. They, like the Army itself, exist for emergencies which must be adequately met, or

the lives of men and the success of our Army may be jeopardized. But in periods of inactivity there is an opinion that the fewer the number of depots which could readily furnish subsistence and stores to our Army in all its branches the less the expense, and yet with an equal degree of integrity and efficiency.

The needs of an army of 25,000 or 30,000 men, or five times those numbers, are not too difficult to foresee and provide for; and more than this during these transition periods is apt to lead to waste. During ordinary seasons supplies of various kinds are called for on timely and specific requisitions for definite periods of time. This enables intelligent purchase and prompt shipment to destination, without recourse to storage, which becomes comparatively unnecessary and expensive.

Whether there is an excess of civil employees beyond the just and economical needs of proper administration will probably receive some special consideration under the recent law; and perhaps, in the same connection, the long-felt want of artisans at posts, which can not be had on account of shortage of money to pay them, may be entitled to renewed attention, and hereafter, in all appropriation bills, the specific amount of labor allowed at each depot can be stated specifically, and similar allotments be made for posts in the Army, based upon their garrison, location, and needs.

The reports of inspection of these establishments
Armories and Arsenals. show generally their condition to be satisfactory in the administration of affairs and the business methods.

With two or three exceptions, the force of enlisted men is kept at the maximum allowance. The service detachments are, as a rule, comfortably and conveniently quartered, and are reported competent and efficient. Some of these establishments are maintained for deposit and distributing purposes and small repairs, and others for the manufacture of cannon, small arms, and projectiles of the most improved pattern, which require expert technical knowledge of superior order. Improvements in the way of additional modern machinery for manufacturing purposes have been secured during the year. In this connection the following extract from the report of inspection of the Springfield Armory, Mass., is given.

The installation of the new machines for the manufacture of the new small-caliber, high-velocity rifle was in process at the date of my last annual inspection. The work has been accomplished, and the machines for daily use are now in place in the new shops and are arranged with great care, having in view the greatest economy of time and force.

The raw steel is received at the water shops, and all the forging, boring, rifling, etc., are done there. It is very pleasing to note that in manufacturing the few hundred rifles of the new caliber now on hand, the machines have been so corrected and improved that the loss through workmanship is now so trifling as to be unworthy of consideration, and can be omitted from future calculations of the output.

The force of civilians employed at this branch of work ranges from 225 at Watervliet to 415 at Springfield. The bulk of these employees are competent artisans; the men, of whom special qualifications are required, being kept within a reasonable number. The salaries range from 72 cents to \$7 per day. At Watervliet the average pay per month per man is \$62.22. It is noted with gratification that the employment of so large a force of men is conducted on business principles; competency and efficiency being essential qualifications required of applicants, and discharges being made only for well-defined cause.

The police and sanitary condition of arsenals generally were reported to be from good to excellent.

Scattered through the several arsenals there is a large quantity of old war material—obsolete and unserviceable articles, without value to the service—that should be sold, if possible, while it is yet marketable. Continued storage is only an incumbrance, while the value of the material deteriorates, which must be sold or disposed of at some time, and therefore the sooner the better.

At Watertown Arsenal the hospital is an ancient farmhouse not adapted to the purposes to which it is being applied. At Indianapolis a portion of the barrack is used as a hospital.

It is found economical, and the inspections are frequent enough to subserve all practical purposes, to connect these with the other inspections that must be made in the vicinity.

The general condition of the roads, walks, shrubbery, and grounds seems to have improved within the last year. The superintendents are reported as giving their best efforts toward making the grounds as attractive and as tidy as possible. The lodges are habitually reported in good condition, except at Mobile and Vicksburg, the latter being reported as damp and unhealthy. A few are reported in need of minor repairs, such as painting and whitewashing.

THE POST COMMANDERS' ANNUAL INSPECTION REPORT.

These reports originated under General Sherman, at the instance of General Marcy. Their discontinuance under the provision of General Orders No. 16, Headquarters of the Army, 1894, after an existence of nearly fifteen years, relieves our post commanders of an arduous duty well performed. Much credit is due them for many of the beneficial changes and improvements inaugurated in the Army during the past decade. These reports gave them an admirable opportunity to present their ideas and views simultaneously on proposed or pending measures, and the consensus of opinion of men most familiar with the needs of their commands could not fail to have a most salutary effect.

IS THE ARMY INSPECTED TO DEATH?

This department has not contended for frequent so much as for thorough and complete inspections, equally and fairly applied, or excluded alike from all. To be acceptable at all, or to all, this general inspection must be so conducted as to be complete and thorough; and the assistance of all is solicited to make it so. The retrenchments which the current Army appropriation bill places upon the expenditures for mileage on account of inspections, except when specially ordered by the Secretary of War or made by Army or department commanders, or by the Inspector-General's Department, is perhaps in line with a cry for reform. As long as inspections are wholly in the interest of discipline and efficiency and militate against irregularities, there will always be some who oppose inspections, and others who court them, and still others who may prefer to apply rather than endure them. Those who, in the consciousness of having done their full duty and having done it well, do not object to being inspected, but favor and desire it, are always the most numerous and the best in every army. The inspection service seems sufficiently important not to be burdened with any odium or blame for which it is not responsible, and to be intrusted with all the duties within its proper function; and surely no officer of this department has visited any one post so frequently in one year as to raise any suspicion of excessive inspections by the Inspection Department.

INSPECTION SERVICE.

It is a pleasure at every proper opportunity to express my appreciation of the work of all who are on duty in this Department, wherever stationed. To those permanently on this duty my appreciation must be well known.

About one-third of the officers upon duty in this department quit us and assumed their other legitimate functions during the current year. How highly the labors of the inspection corps and its individual officers are appreciated by the superior officers of the Army or the service generally may be best said by and perhaps better known to others; but what has been accomplished during these past years of most creditable duty, zealously, loyally, and effectively performed by the officers so detailed, deserves mention, and more than passing attention. In a succinct annual report an adequate statement can hardly be expected covering these several years when the thoroughness is as noticeable as the extent of their work.

Lieutenant-Colonel Kent, of the infantry, and Lieutenant-Colonel Bacon and Major Chaffee and Captain Nowlan, of the cavalry, have done their full share of all that has been done during their time, whether at staff or line work, as far as it fell to their lot. The perfect general inspection of the entire military establishment was probably never more nearly accomplished than during their tour. It is not by such officers that the Army can be said to be "inspected to death." They, at least, are an integral part of it. And, indeed, the Army itself has never failed when called upon to show that it is fully alive and alert to every duty, and has always displayed a perfect exemplification of its discipline, instruction, and worth, as plainly this year as always heretofore.

Respectfully submitted.

J. C. BRECKINRIDGE,
Inspector-General.

The SECRETARY OF WAR.

REPORT OF THE ACTING JUDGE-ADVOCATE-GENERAL.

REPORT

OF

THE ACTING JUDGE-ADVOCATE-GENERAL.

WAR DEPARTMENT,
JUDGE-ADVOCATE-GENERAL'S OFFICE,
Washington, D. C., September 29, 1894.

Hon. DANIEL S. LAMONT,
Secretary of War:

SIR: I have the honor to submit the annual report of the Judge-Advocate-General's Department for the year ending August 31, 1894.

Commissioned officers tried by general court-martial:

Records reported upon and submitted to the Secretary of War for action of the President	4
Records received, revised, and recorded, not requiring the action of the President (acquitted, 1; convicted, 1).....	2
Cadets of the U. S. Military Academy tried by general court-martial:	
Records reported upon and submitted to the Secretary of War.....	7
Enlisted men tried by general court-martial (convicted, 2,054; acquitted, 119)	2, 173
Military convicts tried by general court-martial (convicted)	3
Total trials by general court-martial	2, 189

Trials by general court-martial:

Year ending August 31, 1893	2, 198
Year ending August 31, 1894	2, 189
Decrease	9

Cases apparently brought before general court-martial with a view to discharge on proof of five or more prior convictions:

Year ending August 31, 1893.....	356
Year ending August 31, 1894.....	355
Decrease	1

Decrease of trials this year as compared with last, leaving out trials with a view to discharge on proof of prior convictions 8

Number of convictions of different offences by general court-martial during the year ending August 31, 1894:

Sixteenth Article of War:

Selling ammunition.....	1
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Seventeenth Article of War:

Losing clothing	30
Losing Government property	45
Selling clothing.....	41
Selling Government property	8

Twentieth Article of War:	
Disrespect to commanding officer.....	18
Twenty-first Article of War:	
Attempting to strike superior officer	2
Disobeying superior officer.....	72
Twenty-fourth Article of War:	
Disobeying non-commissioned officer quelling a fray.....	1
Thirty-first Article of War:	
Lying out of quarters	3
Thirty-second Article of War:	
Absence without leave	396
Thirty-third Article of War:	
Failure to attend drill, roll call, etc	162
Thirty-eighth Article of War:	
Drunkenness on duty	148
Thirty-ninth Article of War:	
Quitting post	58
Sleeping on post	45
Fortieth Article of War:	
Quitting guard	36
Forty-seventh Article of War:	
Desertion.....	518
Sixtieth Article of War:	
Embezzlement.....	4
Forgery	1
Frauds	2
Larceny	10
Selling Government property	6
Sixty-first Article of War:	
Duplication of pay vouchers	1
Other offences charged as "Conduct unbecoming an officer and a gentleman" ..	6
Sixty-second Article of War:	
Absence without leave, not chargeable under the Thirty-second Article of War	42
Allowing prisoner to escape.....	9
Assault.....	34
Assault and battery	44
Assault with dangerous or deadly weapon.....	34
Assault with intent to kill	19
Attempt at suicide.....	1
Breach of arrest.....	31
Burglary	2
Committing a nuisance	15
Disobeying commissioned officer	23
Disobeying non-commissioned officer.....	127
Disobeying sentinel.....	4
Disposing of clothing.....	3
Disrespect to superior officer.....	23
Drunkenness	151
Drunkenness, etc., causing arrest, etc., by civil authorities.....	12
Embezzlement	7
Escaping from guard or arrest	9
Escaping from military prison	2
False swearing	5
Fighting	19
Forgery	6
Fraudulent enlistment.....	77
Indecent exposure of person	3
Insubordinate conduct towards non-commissioned officer.....	95
Larceny	89
Malingering	1
Neglect of duty.....	82
Perjury.....	3
Resisting arrest.....	35
Selling, losing, or wasting Government property	2
Uttering forged paper	2
Disorders, etc., charged as "Conduct to the prejudice of good order and military discipline" (not included under previous heads)	529

The following table shows the desertions classified according to the limit of punishment prescribed in the executive order of the President, published in General Orders, No. 21, Headquarters of the Army, 1891:

	Num-ber.	Limit of confine-ment.
Surrendered:		<i>Months.</i>
Within 30 days after desertion.....	32	3
Within 30 days and prior conviction considered.....	2	15
After 30 days and within 90 days after desertion.....	36	6
After 90 days and having not more than 3 months' prior service.....	12	10
After 90 days and having more than 3 months' prior service.....	95	18
After 90 days, having more than 3 months' prior service, and prior conviction considered.....	2	30
Apprehended:		
In service less than 3 months at time of desertion.....	58	12
In service 3 months or more, but less than 6 months.....	78	18
In service 3 months or more, but less than 6 months, and prior conviction considered.....	1	30
In service 6 months or more.....	196	30
In service 6 months or more and prior conviction considered.....	6	42
Total number of desertions.....	518	
Average limit of confinement.....		20.25+

Trials for desertion:	
Year ending August 31, 1893.....	521
Year ending August 31, 1894.....	518
Decrease.....	3

The number of trials by inferior courts-martial, the number resulting in acquittal, and the number of different men tried in the different departments are shown by the following table:

Department of —	Trials.			Acquit-tals.	Differ-ent men tried.
	Garri-son.	Sum-mary.	Total.		
California.....	28	852	880	25	582
Colorado.....	38	2,064	2,102	52	1,177
Columbia.....	9	916	925	33	516
East.....	65	3,364	3,429	129	1,920
Dakota.....	40	1,957	1,997	93	1,344
Missouri.....	34	1,944	1,978	69	1,192
Platte.....	46	1,729	1,775	51	1,023
Texas.....	29	1,048	1,077	26	606
At posts not in any of the above departments.....	*34	889	923	22	692
Total.....	*323	14,763	15,086	500	9,052

* Including 19 trials of prisoners confined in the Leavenworth military prison.

The number of trials by inferior courts-martial for the year ending August 31, 1893, was 14,988, as against 15,086 for the year covered by this report, showing an increase of 98 cases.

Attention is invited to the accompanying reports of the judge-advocates of departments.

Very respectfully, your obedient servant,

G. NORMAN LIEBER,
Acting Judge-Advocate-General.

**REPORT OF LIEUT. COL. THOMAS F. BARR, DEPUTY JUDGE-ADVOCATE-GENERAL,
JUDGE-ADVOCATE DEPARTMENT OF THE EAST.**

HEADQUARTERS DEPARTMENT OF THE EAST,
JUDGE-ADVOCATE'S OFFICE,
Governors Island, New York, September 7, 1894.

SIR: In obedience to the provisions of paragraph 984, Army Regulations, as amended by General Orders, No. 19, Headquarters of the Army, March 16, 1892, I have the honor to submit the following report of the business of this office for the period commencing September 1, 1893, and ending August 31, 1894:

No commissioned officer was brought to trial during that period.

Enlisted men tried by general courts-martial:

Convicted	473
Acquitted.....	32

Total trials by general courts-martial.....	505
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Trials by general courts-martial:

Year ending August 31, 1893.....	476
Year ending August 31, 1894.....	505

Increase over last year	29
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Cases apparently brought before general courts-martial with a view to discharge on proof of five or more previous convictions:

Year ending August 31, 1893	109
Year ending August 31, 1894.....	110

Increase over last year	1
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Trials for fraudulent enlistment alone:

Year ending August 31, 1893.....	8
Year ending August 31, 1894.....	7

Decrease.....	1
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Increase of trials this year as compared with last, leaving out trials with a view to discharge on proof of prior convictions and trials for fraudulent enlistment.	29
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Number of convictions of different offences taken from the records of trials by general courts-martial in the department during the year ending August 31, 1894:

Seventeenth article of war:

Losing or selling clothing.....	30
Losing or selling Government property.....	17

Twentieth article of war:

Disrespect to commanding officer.....	6
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Twenty-first article of war:

Disobeying superior officer	14
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Thirty-second article of war:

Absence without leave	83
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Thirty-third article of war:

Failure to attend drill, roll calls, etc	35
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Thirty-eighth article of war:

Drunkenness on duty	33
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Thirty-ninth article of war:

Leaving post.....	13
Sleeping on post	7

Fortieth article of war:

Quitting guard.....	1
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Forty-seventh article of war:

Desertion.....	156
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Sixtieth article of war:

Fraudulent claim	2
Larceny	1
Selling Government property.....	1

Sixty-second article of war:

Absence without leave, not chargeable under the thirty-second article of war.....	3
Altering company receipt rolls of clothing	1
Assault.....	1
Assault and battery.....	2

Sixty-second article of war—Continued.

Breach of arrest	3
Disobeying commissioned officer	1
Disobeying non-commissioned officer	4
Disobeying sentinel	1
Disrespect to superior officer	3
Disrespect to sentinel	2
Drunkenness	15
Drunkenness, etc., causing arrest, etc., by civil authority	1
False statement	2
Fraudulent enlistment	14
Insubordinate conduct toward non-commissioned officer	2
Larceny	16
Neglect of duty	6
Perjury	2
Resisting arrest	1
Disorders, etc., charged as "conduct to the prejudice of good order and military discipline," not included under previous heads	195

The following table shows the desertions classified according to the limit of punishment prescribed in the executive order of the President, published in General Orders No. 21, Headquarters of the Army, series 1891:

	Num-ber.	Limit of confine-ment.
Surrendered:		<i>Months.</i>
Within 30 days after desertion	8	3
After 30 days, and within 90 days after desertion	8	6
After 90 days, and having not more than 3 months' prior service	4	10
After 90 days, and having more than 3 months' prior service	24	18
Apprehended:		
In service less than 3 months at time of desertion	18	12
In service 3 months or more, but less than 6 months	27	18
In service 6 months or more	67	30
Total number of desertions	156	
Average limit of confinement		20.87+

Trials for desertion:	
Year ending August 31, 1893	132
Year ending August 31, 1894	156
Increase over last year	24

The number of trials by inferior courts-martial, the number resulting in acquittal, and the number of different men tried at the different posts in this department, are shown by the following table:

	Trials.		Total.	Acquit-tals.	Differ-ent men tried.
	Garri-son.	Sum-mary.			
Fort Adams, R. I.	1	138	139	3	85
Fort Barranca, Fla.		65	65	2	35
Fort Columbus, New York Harbor	1	126	127	2	56
Fort Hamilton, New York Harbor	5	242	247	4	129
Jackson Barracks, La.		76	76	1	45
Key West Barracks, Fla.	8	49	57	5	43
Madison Barracks, N. Y.	3	181	184	5	127
Fort Myer, Va.	3	219	222	9	122
Fort Monroe, Va.	2	234	236	24	141
Mount Vernon Barracks, Ala.		119	119	3	69
Fort McHenry, Md.	3	120	123	7	73
Fort McPherson, Ga.	15	355	370	14	199
Newport Barracks, Ky.		41	41		22
Fort Niagara, N. Y.	1	85	86	11	46
Fort Ontario, N. Y.		87	87	1	34
Fort Porter, N. Y.		41	41	2	30
Plattsburg Barracks, N. Y.		56	56	3	42
Fort Preble, Me.		23	23	1	19
St. Francis Barracks, Fla.		159	159	1	70
Fort Schuyler, New York Harbor		79	79		39
Fort Trumbull, Conn.		26	26		19
Fort Thomas, Ky.	8	311	319	14	168
Fort Warren, Mass.	4	120	124	3	69
Fort Wadsworth, New York Harbor	4	175	179	8	97
Fort Wood, New York Harbor		15	15		13
Washington Barracks, D. C.	7	212	219	11	128
Total	65	3,364	3,429	129	1,920

The number of trials by inferior courts for the period ending August 31, 1893, was 3,215, as against 3,429 for the year covered by this report, showing an increase of 214 cases this year as compared with the corresponding period last year.

The large number of cases of desertion brought to trial in this department during the year should not be taken as indicating an increase of crime in that direction. The large reward offered for the apprehension of deserters, and surrenders induced by the depression of business, caused an unusual accession of prisoners.

Of the number brought to trial, 60 were of cases originating in other departments. The actual decrease in the number of desertions within the department during the year was 107, the figures standing 306 and 199.

The large number of cases determined by summary courts is largely to be attributed, in my judgment, to two causes: One, the desire to get out of the service through dishonorable discharge; and the other, the fact that recourse is had to such courts for trivial offences, for which other means of discipline would be sufficient. The fact is that in the prescribed code of penalties the punishment of "dishonorable discharge" when considered as a maximum, attaches to the penalty too little weight. Such a degradation to a soldier should not, it is thought, counterbalance a small forfeiture or limited period of confinement.

Very respectfully,

THOMAS F. BARR,

Lieutenant-Colonel and Deputy Judge-Advocate General, Judge-Advocate.

The ACTING JUDGE-ADVOCATE-GENERAL, U. S. ARMY,
Washington, D. C.

REPORT OF MAJ. EDWARD HUNTER, JUDGE-ADVOCATE U. S. ARMY, JUDGE-ADVOCATE DEPARTMENT OF CALIFORNIA.

HEADQUARTERS DEPARTMENT OF CALIFORNIA,

OFFICE OF JUDGE-ADVOCATE,

San Francisco, Cal., September 6, 1894.

SIR: I have the honor to submit the following report of the business of this office from September 1, 1893, to and inclusive of August 31, current year:

GENERAL COURTS-MARTIAL.

Number of charges forwarded for trial by general courts-martial received and revised	171
Number of trials by general courts-martial, embracing 150 different men, as against 155 trials by general courts-martial, embracing 145 different men, in preceding year	158
Acquittals	13

The offences for which these men were tried are classified as follows:

Seventeenth article of war:	
Losing clothing	1
Losing Government property	2
Selling clothing	1
Selling Government property	1
Twentieth article of war:	
Disrespect to commanding officer	1
Twenty-first article of war:	
Disobeying superior officer	4
Thirty-second article of war:	
Absence without leave	15
Thirty-third article of war:	
Failure to attend roll calls	2
Thirty-eighth article of war:	
Drunkenness on duty	11
Thirty-ninth article of war:	
Quitting post	4
Fortieth article of war:	
Quitting guard	6
Forty-seventh article of war:	
Desertion	* 41

* Includes 20 deserters from organizations in other military departments.

Sixtieth article of war:	
Stealing Government property	2
Sixty-second article of war:	
Abusive language to sentinel	1
Allowing prisoner to get liquor	3
Allowing prisoner to escape	4
Assisting prisoner to escape	1
Assault and battery	6
Attempting to condone a felony	1
Disobeying commissioned officer	2
Disobeying non-commissioned officer	5
Drunkenness	13
Embezzlement	1
False swearing	1
False statement	2
Fighting	3
Forgery	1
Fraudulent enlistment	6
Insubordinate conduct toward non-commissioned officer	4
Introducing liquor into guardhouse	1
Larceny	2
Neglect of duty	8
Perjury	1
Using profane language	1

Summary of punishments imposed by general courts-martial.

Amount of forfeitures (in some cases with confinement)	\$1, 593
Amount of pay detained, to be paid on final statements	\$36
Dishonorably discharged, with forfeiture of pay and allowances	21
Dishonorably discharged, with forfeiture of pay and allowances and confinement	51

Of the foregoing number of men shown as dishonorably discharged 21 were upon the basis of previous convictions.

INFERIOR COURTS-MARTIAL.

Number of trials by inferior courts-martial (852 by summary courts and 28 by garrison courts), embracing 582 different men, as against 883 trials by inferior courts in preceding year	880
Acquittals	25

The offences for which these men were tried are classified as follows:

Thirty-second article of war:	
Absence without leave	339
Thirty-third article of war:	
Failure to attend drill, stables, parades, roll calls	156
Thirty-eighth article of war:	
Drunkenness on duty	41
Sixty-second article of war:	
Abusive, threatening, or obscene language	30
Abusing animal	1
Assault	4
Disobeying commissioned officer	1
Disobeying non-commissioned officer	37
Disrespect to superior officer	2
Disrespect to non-commissioned officer	4
Drunkenness	130
False statement	1
Fighting and other disturbances	33
Gambling	3
Introducing liquor into camp	3
Neglect of duty	45
Disorders, etc., charged as "conduct to the prejudice of good order and military discipline" (not included under previous heads)	50

Of the foregoing trials by summary and garrison courts-martial-

	Men.	Trials.
Tried once	395	395
Tried twice	115	230
Tried three times	50	150
Tried four times	11	44
Tried five times	7	35
Tried six times	2	12
Tried seven times	2	14
Total	582	880

Summary of punishments imposed by inferior courts-martial.

Amount of forfeitures	\$3, 442. 62
Amount of pay detained, to be paid on final statements	\$190. 00
Number of days' confinement	1, 772

The total cases tried by courts-martial are distributed among organizations as follows:

Regiments, corps, etc.	General.	Inferior trials.	
		Garrison.	Summary.
Ordnance Department	2		
Hospital Corps	2		10
Fourth Cavalry	27	12	205
Seventh Cavalry	2		
Eighth Cavalry	1		
Tenth Cavalry	1		
First Artillery	1		
Fourth Artillery	1		
Fifth Artillery	65	10	205
First Infantry	89	5	304
Fourth infantry	1		
Fifth Infantry	1		
Seventh Infantry	2		
Tenth Infantry	4	1	28
Fourteenth Infantry	4		
Sixteenth Infantry	2		
Seventeenth Infantry	1		
Eighteenth Infantry	1		
General service recruits	1		
Total	158	28	852

A comparison with preceding year is submitted as follows:

1892-1893.

Average enlisted strength of the department	1, 283
Total number of trials (excluding deserters from other departments), embracing 663 different men	1, 020

1893-1894.

Average enlisted strength of the department	1, 324
Total number of trials (excluding deserters from others departments), embracing 712 different men	1, 018
Applications by and for military prisoners for remission of sentence, and other official communications relating thereto	80
Official reports received and acted on, inquiries answered, and opinions given	100

Very respectfully, your obedient servant,

EDWARD HUNTER,
Judge-Advocate, U. S. Army.

The ACTING JUDGE-ADVOCATE-GENERAL, U. S. ARMY,
Washington, D. C.

REPORT OF MAJ. S. W. GROESBECK, JUDGE-ADVOCATE, U. S. ARMY, JUDGE-ADVOCATE
DEPARTMENT OF THE MISSOURI.

HEADQUARTERS DEPARTMENT OF THE MISSOURI,
OFFICE OF THE JUDGE-ADVOCATE,
Chicago, Ill., September 12, 1894.

SIR: I have the honor to submit the annual report of the business of this office
for the year ending August 31, 1894.

GENERAL COURTS-MARTIAL.

Enlisted men tried	336
Number of acquittals	13
Number of discharges on citation of previous convictions	50

Number of convictions of different offences.

Seventeenth article of war:	
Losing clothing	6
Losing Government property	11
Selling clothing	2
Spoiling equipments	1
Twentieth article of war:	
Disrespect to commanding officer	1
Twenty-first article of war:	
Attempting to strike superior officer	1
Disobeying superior officer	8
Thirty-second article of war:	
Absence without leave	72
Thirty-third article of war:	
Failure to attend drill, roll call, etc.	32
Thirty-eighth article of war:	
Drunkenness on duty	17
Thirty-ninth article of war:	
Leaving post	4
Sleeping on post	5
Fortieth article of war:	
Quitting guard	10
Forty-seventh article of war:	
Desertion	112
Sixtieth article of war:	
Larceny	1
Sixty-second article of war:	
Absence without leave, not chargeable under the thirty-second article of war	4
Allowing prisoner to escape	1
Assault	5
Assault and battery	1
Assault with weapon	6
Assault with intent to kill	2
Breaking arrest	3
Committing a nuisance	3
Disobeying commissioned officer	6
Disobeying non-commissioned officer	19
Disorderly conduct	9
Drunkenness	13
Drunkenness and disorderly conduct	13
Drunkenness, etc., causing arrest, etc., by civil authorities	5
False swearing	1
False statement to officer	5
Forgery	3
Fraudulent enlistment	4
Insubordinate conduct toward non-commissioned officer	12
Larceny	8
Malingering	1
Neglect of duty	16
Resisting arrest	2
Disorders, etc., charged as "conduct to the prejudice," etc., not included under previous heads	41

The following table shows the desertions, classified according to the limit of punishment for the offence prescribed in General Orders No. 21, Headquarters of the Army, 1891:

	Number.	Limit of punishment.
		<i>Months.</i>
Surrendered:		
Within 30 days after desertion	7	3
After 30 days, and within 90 days after desertion	6	6
After 90 days, and having more than 3 months' prior service	35	18
Apprehended:		
In service less than 3 months at time of desertion	10	12
In service 3 months or more, but less than 6 months	17	18
In service 3 months or more, but less than 6 months, and prior convictions considered	1	30
In service 6 months or more	33	30
In service 6 months or more, and prior convictions considered	3	42
Total number of desertions	112	

Trials and convictions of desertion—	
Year ending August 31, 1892	71
Year ending August 31, 1893	111
Year ending August 31, 1894	112

The limitation by law to \$10 for the apprehension and delivery of deserters will restore the old immunity from apprehension and punishment, and it is very probable will lead to an increase in desertion, with a decrease in the number of men apprehended and tried for that offense. If the \$60 reward had been permitted to stand, it is very probable that trials for desertion would soon have begun to decrease because of a marked decrease in the number of men deserting. As it is, the law once more favors and encourages criminality, and in the end the expenses resulting from desertion will increase.

Sentimentalism affects more and more the nature of the laws of the several States and of the nation regarding criminals, and, as a consequence, crime throughout the land, if the weight of expert testimony can be accepted, increases faster than the ratio of increase in the population. A three-year enlistment will do little to check desertion, for the excellent reason that it, of itself, does not increase the sense of moral obligation. In the past by far the largest percentage of desertions occurred in the first year of enlistment, and this fact will doubtless continue to manifest itself.

INFERIOR COURTS.

The number of trials by inferior courts-martial, the number of acquittals, and the number of different men tried, are shown in the following table:

Garrison	34
Summary	1, 944
Total	1, 978
Acquittals	69
Different men tried	1, 192

The following table gives the average enlisted strength and number of trials by general and inferior courts for the past four years:

Year.	Average enlisted strength.	Trials by general courts-martial.	Trials by inferior courts-martial.	Per cent of trials by inferior courts-martial.
1891	3, 004	225	1, 958	65. 18
1892	3, 393	322	2, 653	78. 19
1893	3, 308	290	2, 140	64. 69
1894	3, 602	336	1, 978	58. 33

The large decrease in the percentage of trials by inferior courts this year is believed to be due to the fact that the troops have had more than the usual amount of actual service occasioned by the railroad strikes. It is a well-established fact that when troops are engaged in field operations for instruction, or on active service of any nature, offences decrease.

DESERTIONS.

The number of desertions, the probable cause therefor, and the posts from which the desertions occurred are shown in the following tables:

Number of desertions and the probable cause therefor as found by boards of survey.

Probable cause.	Year of enlistment.					Total.
	1st.	2d.	3d.	4th.	5th.	
Cause unknown.....	38	15	.....	.....	.....	53
General dissatisfaction.....	16	4	1	.....	.....	21
To avoid trial and punishment.....	10	9	2	.....	.....	21
Worthless character.....	4	2	.....	.....	.....	6
Restless disposition.....	4	1	1	.....	.....	6
Persuaded by others.....	4	.....	1	.....	.....	5
Inability to submit to discipline.....	3	1	1	.....	.....	5
Roving disposition.....	3	1	.....	.....	.....	4
Drunkenness and effects thereof.....	2	.....	.....	.....	1	3
Inaptitude for the service.....	2	.....	.....	.....	.....	2
Fear of horses.....	2	.....	.....	.....	.....	2
Enlisted in the winter with intent to desert in the spring.....	1	.....	.....	.....	.....	1
Incurred dislike of the men of the company.....	.....	1	.....	.....	.....	1
Homeickness.....	1	.....	.....	.....	.....	1
Heavily in debt.....	.....	1	.....	.....	.....	1
Refused a furlough.....	1	.....	.....	.....	.....	1
Married a loose woman and went to Canada.....	.....	1	.....	.....	.....	1
Suspected of being a deserter from another regiment.....	1	.....	.....	.....	.....	1
Infatuation for a woman.....	1	.....	.....	.....	.....	1
Suspected of theft.....	1	.....	.....	.....	.....	1
Total.....	94	36	6	.....	1	137

The average enlisted strength and the number of desertions from posts are given in the following table:

Posts.	Strength.	Desertions.	Per cent.
Fort Mackinac, Mich.....	62	.....	.....
Fort Supply, Okla.....	229	4	1.7
Fort Wayne, Mich.....	253	5	1.9
Fort Sill, Okla.....	308	10	3.2
Fort Leavenworth, Kans.....	696	23	3.3
Fort Sheridan, Ill.....	646	22	3.4
Fort Reno, Okla.....	316	15	4.7
Fort Riley, Kans.....	706	40	5.6
Fort Brady, Mich.....	175	18	10.2
Total.....	3,391	137	4.4

The number of desertions for the year ending June 30, 1893, was 183, and the percentage of loss for the department for the same period was 5.5 per cent, showing a decrease of 1.01 per cent in favor of the same period this year.
Respectfully submitted.

S. W. GROESBECK,
Judge-Advocate, U. S. Army.
The ACTING JUDGE-ADVOCATE-GENERAL, U. S. ARMY,
Washington, D. C.

REPORT OF CAPT. CHARLES MCCLURE, ACTING JUDGE-ADVOCATE, DEPARTMENT OF THE COLUMBIA.

HEADQUARTERS DEPARTMENT OF THE COLUMBIA,
JUDGE-ADVOCATE'S OFFICE,
Vancouver Barracks, Wash., September 19, 1894.

SIR: Pursuant to the provisions of paragraph 984, Army Regulations, as amended by General Orders, No. 19, Adjutant-General's Office, series of 1892, I have the honor to submit the following report for the year ending August 31, 1894.
The appendices herewith, which are made a part of this report, are as follows. General courts-martial, A; inferior courts-martial, B; desertions, C.

GENERAL COURTS-MARTIAL.

The number of trials by general courts-martial has been 83, as against 98 last year and 94 the preceding year.

INFERIOR COURTS-MARTIAL.

The number of trials by inferior courts-martial has been 925, as against 748 last year and 872 the previous year—eleven months.

The number of trials by summary court, when compared with the average number of troops in the department, 1,405, does appear large, but it should not excite surprise.

Attention is invited to the following table, particularly with reference to the number of men released without trial since the summary court went into operation in this department and during the one year, 1889-'90, immediately preceding:

Year.	Number of trials.		Total.	Number of men released without trial.
	Garrison.	Summary.		
1889-'90	797	.....	797	428
1890-'91	114	1,184	1,298	115
1891-'92	42	830	872	70
1892-'93	14	734	748	53
1893-'94	9	916	925	58

It is thus seen that the increase in the number of trials by the summary court, when compared with the number formerly had by garrison courts-martial, is primarily due to the decrease in the number released without trial. This decrease in the number released without trial and the corresponding increase in the number of trials must have been intended, and should have been foreseen, as the inevitable consequence of reducing—as was done by the summary court—the authorized period of confinement awaiting trial from eight days to twenty-four hours.

Any system of disciplinary punishments would, of course, reduce the number of trials by the summary court; but, in view of this court's simple and summary mode of procedure, it is not believed that any other disciplinary punishments than those involved in admonitions, deprivations of privileges, and extra tours of company, troop, or battery fatigue duty are desirable in our service.

Circular No. 13, Adjutant-General's Office, 1891, in specifically stating that officers of the Army "are not obliged to bring cases before the summary court which they believe ought to be disposed of with an admonition or the withholding of privileges or indulgences," has created a doubt in the minds of most officers as to whether the imposition of extra tours of fatigue duty as a form of disciplinary punishment is not impliedly forbidden by the circular referred to.

In my opinion there can be no legal objection to permitting company, troop, or battery commanders, in their discretion and acting under the direction and control of commanding officers, to require enlisted men guilty of minor offenses, for which only slight punishments are authorized, to elect between a trial by court-martial and a specified number of extra tours of company, troop, or battery fatigue duty.

In view, however, of the language of the circular just quoted, such a method of disciplinary punishment, to become generally effective, should first be officially sanctioned by the War Department.

PREVIOUS CONVICTIONS.

I beg leave to renew my recommendations implied in the following conclusions under this head, as set forth in former reports:

(1) While courts-martial should have power to discharge from the service men who persistently defy the requirements of discipline, as evidenced by previous convictions, yet to deter those who would enter upon a line of bad conduct to invoke such penalty, said courts should have power to add, in all cases, some confinement at hard labor to dishonorable discharge.

(2) Five previous convictions should not sustain a sentence of dishonorable discharge unless at least one by general court-martial is included.

(3) In every trial by general court-martial, after a finding of guilty, where a discretionary punishment is authorized, evidence, if any, of all previous convictions had within a prescribed period should be required to be submitted to the court to

aid it in determining upon its sentence. Where the limit of punishment is such that it should not be increased by reason of previous convictions, they should be considered in determining whether that limit should be imposed.

In this connection attention is invited to the delays which result from an enforcement of paragraph 5, General Orders No. 12, Adjutant-General's Office, current series, in the matter of evidence of previous convictions by summary court, in cases where there have been changes of station.

It is believed the transcript furnished the company commander could properly be viewed as an order promulgating the trial to the extent that such commander could make a true copy of it for use as evidence of the previous conviction.

DESECTIONS.

The number of desertions this year has been 47, as against 122 last year, showing the large decrease of 75.

The records of this office show the number of desertions each year since 1884-'85. It is believed the number this year is less than ever before in the history of the department.

Attention is invited to Appendix C for a detailed statement of the results of investigations made by boards of survey appointed to inquire into the causes of the desertions during the year.

It is noted that, as usual, the great majority of the deserters were in the first or second year of the first enlistment, and also, as usual, a majority were native born.

Very respectfully, your obedient servant,

CHARLES MCCLURE,
Captain and Acting Judge-Advocate.

The ACTING JUDGE-ADVOCATE-GENERAL, U. S. ARMY.
Washington, D. C.

APPENDIX A.

GENERAL COURTS-MARTIAL.

Number of general court-martial records received, revised, recorded, and forwarded to the Acting Judge-Advocate-General during the year ending August 31, 1894, 83 cases of enlisted men.

Convictions.....	81
Acquittals.....	2
Total.....	83
Comparison of total number with that of two previous years:	
Cases tried 1891-'92 *	94
Cases tried 1892-'93	98
Cases tried 1893-'94	83
Decrease from last year	15

* Eleven months.

	Men.	Cases.
Tried once.....	69	69
Tried twice.....	7	14
Total.....	76	83

Distribution of cases tried by inferior courts, with number confined and released without trial, at the posts in the department.

Post.	Strength of garrison.	Cases tried.		Men tried.	Per cent men tried.	Confined and released without trial.
		Summary.	Garrison.			
Boise barracks.....	117	72	1	41	35.0	.....
Fort Canby	114	87	1	57	50.0	2
Fort Sherman	372	245	1	150	40.3	14
Fort Spokane.....	112	87	1	55	49.1	.....
Fort Townsend	63	22	.....	12	19.0	11
Vancouver barracks.....	429	235	5	132	30.8	31
Fort Walla Walla	198	166	.....	83	41.9	.....
Total and average.....	1,405	* 914	9	† 530	36.6	58

* Two cases of men not belonging to department not included.
† Sixteen men tried, both at Forts Sherman and Spokane, consequent upon change of station. Total number of different men belonging to department tried by inferior courts, 514.

NOTE.—The following cases tried in the field during the year are included in the several commands to which the men tried belong, viz: Boise barracks, 2; Fort Sherman, 17; Fort Spokane, 1; Vancouver barracks, 18; Fort Walla Walla, 1.

Distribution of cases and men tried by inferior courts among the different organizations serving in the department.

Organization.		Trials.	Band.	A.	B.	C.	D.	E.	F.	G.	H.	I.	K.	L.	M.	Total.
Fourth Cavalry	Cases ..	14	54	.....	.....	33	33	41	30	62	.....	.....	.....	.....	.....	267
	Men	6	26	.....	.....	15	22	25	23	34	.....	.....	.....	.....	.....	151
Fifth Artillery.....	Cases ..	.....	30	8	41	.....	.....	.....	.....	.....	.....	.....	.....	.....	3	82
	Men .....	.....	21	7	24	.....	.....	.....	.....	.....	.....	.....	.....	.....	3	55
Fourth Infantry	Cases ..	3	21	43	32	49	34	51	47	54	.....	.....	.....	.....	.....	334
	Men	3	16	21	16	26	21	26	23	29	.....	.....	.....	.....	.....	181
Fourteenth Infantry ..	Cases ..	13	41	44	27	18	28	21	35	.....	.....	.....	.....	.....	.....	227
	Men	6	21	21	15	12	10	11	18	.....	.....	.....	.....	.....	.....	120
Hospital Corps.....	Cases ..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	13
	Men .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7
Total.....	Cases ..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	923
	Men .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	514

NOTE.—Troops, batteries, and companies showing no trials in above table are not serving in the department. Batteries A and C, Fifth Artillery, left the department, and Batteries B and M, Fifth Artillery, entered the department June 10, 1894.

Number of times tried by inferior courts.

	Men.	Cases.
Tried once	295	295
Tried twice	114	228
Tried three times	52	156
Tried four times	33	132
Tried five times	18	90
Tried six times	4	24
Total	516	925

Number of summary court cases, 1893-'94.....	916
Number of garrison court cases, 1893-'94.....	9
Number of cases tried by inferior courts.....	925
Number tried last year	768
Increase from last year.....	177

Classification of offenses tried by inferior courts.

Lying out of quarters (laid under article 31).....	4
Absence without leave (laid under article 32).....	282
Absence from drill, roll calls, etc. (laid under article 33).....	355
Drunkenness on duty (laid under article 38).....	67
Disorders charged as "conduct to the prejudice of good order and military discipline" (laid under article 62).....	337
Total number of offenses.....	1,045

APPENDIX C.

DESERTIONS.

Number of desertions during the year ending August 31, 1894...	47
Number reported last year	122
Decrease.....	75

Causes, etc., of desertions, ascertained under the provisions of paragraph 117, Army Regulations, and comparison with same data for three preceding years.

Year.	Character as set forth in reports of boards of survey.						Causes of desertion—Opinions given in reports of boards of survey.							Nativ- ity.		
	Excellent.	Good.	Fair.	Bad.	Worthless.	Not formed.	Not ascertained.	Dissatisfaction with service.	To escape trial.	To join relatives.	Debts unable to pay.	Roving disposi- tion.	Coming into money.	Worthlessness.	American.	Foreign.
1893-'94.....	2	27	10	5	2	1	25	4	4	1	7	3	1	2	32	15
1892-'93.....	2	26	24	8	3	4	69	23	2	1	4	7	1	2	29	43
1891-'92.....	3	27	11	9	...	5	16	14	3	2	3	4	...	...	33	16
1890-'91.....	6	51	22	13	9	5	38	18	5	1	5	6	...	...	37	29

Year.	Number tried by courts-martial, and number of trials.				Length of service.						Months in which desertions occurred.												
	General courts.		Inferior courts.		Less than 1 year.	Between 1 and 2 years.	Between 2 and 3 years.	Between 3 and 4 years.	Between 4 and 5 years.	Over 5 years' service.	1893.					1894.							
	Tried once.	Tried more than once.	Not tried.	August.							September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	July.	August.	
1893-'94	2	13	11	22	21	15	3	1	2	5	3	3	5	2	6	1	1	1	5	5	8	3	4
1892-'93	1	17	21	33	71	37	5	2	1	6	7	6	2	4	6	4	6	14	13	25	17	7	...
1891-'92 .....	...	5	17	33	32	5	7	3	...	3	2	5	5	3	1	3	2	9	4	8	8	5	...
1890-'91	4	18	34	54	41	33	20	1	...	11	9	12	9	11	12	1	1	5	3	16	10	17	...

Distribution of cases of desertion among the different military posts of the department.

Post.	Average strength of garrison.	Number of desertions.	Per cent.
Boise Barracks.....	117	3	2.6
Fort Canby.....	114	9	7.9
Fort Sherman.....	372	6	1.6
Fort Spokane.....	112	2	1.8
Fort Townsend.....	63	4	6.3
Vancouver Barracks.....	429	12	2.8
Fort Walla Walla.....	198	11	5.6
Total and average.....	1,405	47	3.3

Distribution of cases tried by inferior courts, with number confined and released without trial, at the posts in the department.

Post.	Strength of garrison.	Cases tried.		Men tried.	Per cent men tried.	Confined and released without trial.
		Summary.	Garrison.			
Boise barracks.....	117	72	1	41	35.0
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Fort Sherman	372	245	1	150	40.3	14
Fort Spokane.....	112	87	1	55	49.1
Fort Townsend	63	22	12	19.0	11
Vancouver barracks.....	429	235	5	132	30.8	31
Fort Walla Walla	198	166	.....	83	41.9	.....
Total and average.....	1,405	* 914	9	† 530	36.6	58

* Two cases of men not belonging to department not included.
† Sixteen men tried, both at Forts Sherman and Spokane, consequent upon change of station. Total number of different men belonging to department tried by inferior courts, 514.

NOTE.—The following cases tried in the field during the year are included in the several commands to which the men tried belong, viz: Boise barracks, 2; Fort Sherman, 17; Fort Spokane, 1; Vancouver barracks, 18; Fort Walla Walla, 1.

Distribution of cases and men tried by inferior courts among the different organizations serving in the department.

Organization.	Trials.	Band.	A.	B.	C.	D.	E.	F.	G.	H.	I.	K.	L.	M.	Total.
Fourth Cavalry	Cases ..	14	54	.....	.....	33	33	41	30	62	.....	.....	.....	.....	267
	Men ..	6	26	.....	.....	15	22	25	23	34	.....	.....	.....	.....	151
Fifth Artillery.....	Cases ..	.....	30	8	41	.....	.....	.....	.....	.....	.....	.....	.....	3	82
	Men ..	.....	21	7	24	.....	.....	.....	.....	.....	.....	.....	.....	3	55
Fourth Infantry	Cases ..	3	21	43	32	49	31	51	47	51	.....	.....	.....	.....	334
	Men ..	3	16	21	16	26	21	26	23	20	.....	.....	.....	.....	181
Fourteenth Infantry ..	Cases ..	13	41	44	27	18	28	21	35	.....	.....	.....	.....	.....	227
	Men ..	6	21	21	15	12	16	11	18	.....	.....	.....	.....	.....	120
Hospital Corps.....	Cases ..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	13
	Men ..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7
Total.....	Cases ..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	923
	Men ..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	514

NOTE.—Troops, batteries, and companies showing no trials in above table are not serving in the department. Batteries A and C, Fifth Artillery, left the department, and Batteries B and M, Fifth Artillery, entered the department June 10, 1894.

Number of times tried by inferior courts.

	Men.	Cases.
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Tried twice	114	228
Tried three times	52	156
Tried four times	33	132
Tried five times	18	90
Tried six times	4	24
Total	516	925

Number of summary court cases, 1893-'94.....	916
Number of garrison court cases, 1893-'94.....	9
Number of cases tried by inferior courts.....	925
Number tried last year	748
Increase from last year.....	177

Classification of offenses tried by inferior courts.

Lying out of quarters (laid under article 31).....	4
Absence without leave (laid under article 32).....	282
Absence from drill, roll calls, etc. (laid under article 33).....	355
Drunkenness on duty (laid under article 38).....	67
Disorders charged as "conduct to the prejudice of good order and military discipline" (laid under article 62).....	337
Total number of offenses.....	1,045

APPENDIX C.

DESERTIONS.

Number of desertions during the year ending August 31, 1894..	47
Number reported last year	122
Decrease.....	75

Causes, etc., of desertions, ascertained under the provisions of paragraph 117, Army Regulations, and comparison with same data for three preceding years.

Year.	Character as set forth in reports of boards of survey.						Causes of desertion—Opinions given in reports of boards of survey.								Nativity.	
	Excellent.	Good.	Fair.	Bad.	Worthless.	Not formed.	Not ascertained.	Dissatisfaction with service.	To escape trial.	To join relatives.	Debts unable to pay.	Roving disposition.	Coming into money.	Worthlessness.	American.	Foreign.
1893-'94.....	2	27	10	5	2	1	25	4	4	1	7	3	1	2	32	15
1892-'93.....	2	76	24	8	8	4	69	23	9	1	4	7	1	2	79	43
1891-'92.....	3	27	11	9	...	5	16	14	3	2	6	4	...	...	39	16
1890-'91.....	6	51	22	13	9	5	38	18	5	1	5	6	...	...	57	49

Year.	Number tried by courts-martial, and number of trials.				Length of service.						Months in which desertions occurred.												
	General courts.	Inferior courts.		Not tried.	Less than 1 year.	Between 1 and 2 years.	Between 2 and 3 years.	Between 3 and 4 years.	Between 4 and 5 years.	Over 5 years' service.	1893.					1894.							
		Tried once.	Tried more than once.								August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	July.	August.
1893-'94.....	2	13	11	22	21	15	3	1	2	5	3	3	5	2	6	1	1	1	5	5	8	3	4
1892-'93.....	1	17	21	33	71	37	6	2	1	6	7	6	2	4	6	4	6	14	18	25	17	7	...
1891-'92.....	...	5	17	33	32	5	7	3	...	8	2	5	5	3	1	3	2	9	4	8	8	5	...
1890-'91.....	4	18	34	54	41	33	20	1	...	11	9	12	9	11	12	1	1	5	3	10	10	17	...

Distribution of cases of desertion among the different military posts of the department.

Post.	Average strength of garrison.	Number of desertions.	Per cent.
Boise Barracks.....	117	3	2.6
Fort Canby.....	114	0	7.9
Fort Sherman.....	372	6	1.6
Fort Spokane.....	112	2	1.8
Fort Townsend.....	63	4	6.3
Vancouver Barracks.....	429	12	2.8
Fort Walla Walla.....	198	11	5.6
Total and average.....	1,405	47	3.3

Distribution of cases of desertion among different organizations serving in the department.

Organizations.	Band.	A.	B.	C.	D.	E.	F.	G.	H.	M.	Total.	Average strength of organization.	Per cent.
Fourth Cavalry		2	(*)	(*)	....	4	2	2	9	....	19	355	5.4
Fifth Artillery	(*)	2	7	(*)	(*)	(*)	(*)	(*)	....	9	111	8.1
Fourth Infantry	3	1	2	....	1	....	....	....	7	456	1.5
Fourteenth Infantry	4	2	2	....	4	....	(*)	....	12	423	2.8
Noncommissioned staff	17	....
Hospital Corps	43	....
Total and average	47	1,405	3.3

* Not serving in the department.

REPORT OF CAPT. E. H. CROWDER, ACTING JUDGE-ADVOCATE, DEPARTMENT OF THE PLATTE.

HEADQUARTERS DEPARTMENT OF THE PLATTE,
JUDGE-ADVOCATE'S OFFICE,
Omaha, Nebr., August 31, 1894.

SIR: Under the requirements of Army Regulations, 984, as amended by General Orders, No. 19, Adjutant-General's Office, 1892, I have the honor to submit the following report of the business of this office for the period commencing September 1, 1893, and ending August 31, 1894.

During the period named 299 sets of charges have been received, of which number 248 were tried by general courts-martial; 2 recommended for trial in other departments; 1 returned for trial by garrison court-martial; 17 returned for trial by summary court; 6 restored to duty without trial; 4 discharged before trial; 1 retired before trial (commissioned officer); 4 withdrawn; 13 awaiting trial, and 3 pending.

The cases tried include:

Commissioned officers	3
Non-commissioned officers	17
Privates, etc	228
Total	248

The number of convictions of different offenses, during the period named, is as follows:

Seventeenth article of war:	
Losing clothing	1
Losing Government property	2
Selling clothing	4
Selling Government property	1
Twentieth article of war:	
Disrespect to commanding officer	1
Twenty-first article of war:	
Disobeying superior officer	13
Thirty-second article of war:	
Absence without leave	51
Thirty-third article of war:	
Failure to attend drill, roll calls, etc	17
Thirty-eighth article of war:	
Drunkenness on duty	27
Thirty-ninth article of war:	
Quitting post	6
Sleeping on post	7
Fortieth article of war:	
Quitting guard	9
Forty-seventh article of war:	
Desertion	34
Sixtieth article of war:	
Embezzlement	1
Sixty-first article of war:	
Duplication of pay vouchers	1
False statements to department commander	1

Sixty-second article of war:

Absence without leave not chargeable under the thirty-second article of war..	8
Allowing prisoner to escape.....	1
Assault.....	7
Assault and battery.....	2
Assault with dangerous or deadly weapon.....	10
Assault with intent to kill.....	1
Breach of arrest.....	6
Burglary.....	1
Committing a nuisance.....	4
Disobeying commissioned officer.....	2
Disobeying non-commissioned officer.....	19
Disobeying sentinel.....	1
Disrespect to superior officer.....	9
Drunkenness.....	21
Embezzlement.....	3
Escaping from guard or arrest.....	2
Fighting.....	4
Forgery.....	1
Fraudulent enlistment.....	6
Indecent exposure of person.....	1
Insubordinate conduct toward non-commissioned officer.....	29
Larceny.....	10
Neglect of duty.....	6
Resisting arrest.....	12
Selling, losing, or wasting Government property.....	1
Uttering forged paper.....	1
Disorders, etc., charged as "conduct prejudicial to good order and military discipline" (not included under previous heads).....	43

The cases tried are apportioned among the different organizations as follows:

Second Infantry.....	47	Twenty-first Infantry.....	18
Third Infantry.....	2	Twenty-third Infantry.....	1
Seventh Infantry.....	2	Twenty-fifth Infantry.....	2
Eighth Infantry.....	37	Sixth Cavalry.....	43
Tenth Infantry.....	1	Ninth Cavalry.....	34
Fourth Cavalry.....	1	Hospital Corps.....	7
Eighth Cavalry.....	1		
Fourteenth Infantry.....	1	Total.....	248
Seventeenth Infantry.....	51		

These records of trials have all been examined in this office, the decisions and orders of the department commander indorsed thereon, promulgated in orders, and forwarded to the office of the Judge-Advocate-General.

INFERIOR COURTS.

During the period named 1,775 records of trials by inferior courts, garrison and summary, have been received, revised, and filed in this office, of which 1,729 were by summary and 46 by garrison court.

These trials include violations of the following Articles of War:

Sixteenth article of war:

Losing ammunition.....	1
------------------------	---

Seventeenth article of war:

Selling clothing.....	1
Losing clothing.....	5

Twenty-first article of war:

Disobeying superior officer.....	3
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Thirty-first article of war:

Lying out of quarters.....	6
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Thirty-second article of war:

Absence without leave.....	434
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Thirty-third article of war:

Failure to attend drill, roll calls, etc.....	590
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Thirty-eighth article of war:

Drunkenness on duty other than guard.....	85
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Sixty-second article of war:

Absence without leave not chargeable under the thirty-second article of war.	80
Abusing horse.....	8
Assault.....	40
Breach of arrest.....	9

Sixty-second article of war—Continued

Committing a nuisance.....	13
Concealed weapon.....	3
Dirty gun, clothing, etc.....	35
Disobeying non-commissioned officer.....	98
Disobeying post orders.....	12
Disorderly conduct near post.....	17
Disrespect to superior officer.....	35
Disrespect to sentinel.....	1
Drunkenness.....	115
Drunkenness, etc., causing arrest by civil authorities.....	4
Drunkenness and disorderly conduct in post exchange or quarters.....	115
False statement to officer or non-commissioned officer.....	32
Gambling.....	1
Insubordinate conduct toward non-commissioned officer.....	97
Introducing liquor in post.....	9
Neglect of duty.....	61
Neglect of duty (sentinel).....	29
Resisting arrest.....	16
Disorders, etc., charged as "conduct to the prejudice of good order and military discipline" (not included under previous heads).....	89

These cases are apportioned among the different organizations as follows:

Sixth Cavalry.....	285	Twenty-first Infantry.....	150
Ninth Cavalry.....	330	Hospital Corps.....	16
Second Infantry.....	287	Indian Scouts.....	4
Seventh Infantry.....	25		
Eighth Infantry.....	318	Total.....	1,775
Seventeenth Infantry.....	360		

The number of different men tried by inferior courts during the year is 1,023, and the number of acquittals 51.
The sentences in three cases were set aside as illegal; in four cases the proceedings were set aside for want of jurisdiction; and in seven cases the sentences were disapproved by the post commander.

SUMMARY COURTS.

One thousand seven hundred and twenty-nine records of trials by summary court have been received, revised, and filed in this office.
The following table exhibits the number of such cases tried by summary court at the several posts in the department:

Fort McKinney, Wyo.....	273	Fort D. A. Russell, Wyo.....	344
Fort Niobrara, Nebr.....	235	Fort Sidney, Nebr.....	121
Fort Omaha, Nebr.....	314	Fort Washakie, Wyo.....	85
Camp Pilot Butte, Wyo.....	26		
Fort Robinson, Nebr.....	331	Total.....	1,729

In twenty-five cases brought before summary courts, the accused objected to trial thereby and requested trial by court-martial.
The following table exhibits the number of trials by the different courts-martial in this department, as compared with the record of last year:

Year.	General court-martial.	Garrison court-martial.	Summary court.	Per cent of trials to average enlisted strength.		
				General.	Garrison.	Summary.
1892-'93.....	307	43	1,736	8.6	1.2	49
1893-'94.....	248	46	1,729	9.1	1.6	63.5

I renew my recommendations of previous years as to the revival of the garrison court-martial and as to advisability of an increase in the punishments prescribed for the offenses of desertion and drunkenness on duty.
Very respectfully,

E. H. CROWDER,
Captain and Acting Judge-Advocate, U. S. Army.
The JUDGE-ADVOCATE-GENERAL U. S. ARMY,
Washington, D. C.

REPORT OF CAPT. F. J. KERNAN, ACTING JUDGE-ADVOCATE, DEPARTMENT OF TEXAS

HEADQUARTERS DEPARTMENT OF TEXAS,
JUDGE-ADVOCATE'S OFFICE,
San Antonio, Tex., September 10, 1894.

SIR: I have the honor to submit the following report of the business of this office for the year ending August 31, 1894.

There were no commissioned officers tried.

The following table shows the number of general, garrison, and summary courts-martial cases tried at the several posts in the department, with the percentage of trials:

Posts.	Average enlisted strength of garrison.	Number and percentage of trials.					
		General cases tried.	Percentage of general cases tried.	Garrison cases tried.	Summary cases tried.	Total inferior cases tried.	Percentages of inferior cases.
New Fort Bliss	244	24	9.84	1	103	104	42.62
Old Fort Bliss	118	8	6.78	4	57	61	51.69
Fort Brown	117	4	3.42	.....	102	102	87.18
Fort Clark	311	31	9.97	4	178	182	58.52
Camp Eagle Pass	50	.....	.....	.....	84	84	150.00
Fort Hancock	59	.....	.....	.....	13	13	22.03
Fort McIntosh	194	7	3.61	5	108	113	58.25
Fort Ringgold	207	13	7.73	.....	116	116	56.04
Fort Sam Houston	626	62	9.90	15	287	302	48.24
Total	1,932	152	7.87	29	1,048	1,077	55.75
Convictions .....	.....	148	.....	22	1,029	1,051	.....
Acquittals .....	.....	4	.....	7	19	26	.....

There were 606 different enlisted men tried by inferior courts-martial.

The different offenses tried by general courts-martial were as follows:

Nature of offense.	Article of war violated.	Cases tried.
Losing clothing	Seventeenth	2
Losing Government property	do	3
Selling clothing	do	8
Selling Government property	do	5
Disobeying superior officer	Twenty-first	8
Disobeying noncommissioned officer quelling a fray	Twenty-fourth	1
Lying out of quarters	Thirty-first	2
Absence without leave	Thirty-second	20
Failure to attend drill, roll call, etc.	Thirty-third	11
Drunkenness on duty	Thirty-eighth	13
Quitting post	Thirty-ninth	6
Sleeping on post	do	4
Quitting guard	Fortieth	5
Desertion	Forty-seventh	40
Larceny	Sixtieth	1
Absence without leave	Sixty-second	4
Assault	do	4
Assault and battery	do	1
Assault with weapon	do	3
Breach of arrest	do	6
Committing a nuisance	do	2
Conduct to the prejudice of good order and military discipline	do	16
Disobeying commissioned officer	do	3
Disobeying non-commissioned officer	do	12
Disposing of clothing	do	2
Drunkenness	do	15
Drunkenness, etc., causing arrest by civil authorities	do	1
Escaping from guard or arrest	do	5
Fighting	do	3
Fraudulent enlistment	do	3
Indecent exposure of person	do	1
Insubordinate conduct toward commissioned officer	do	2
Insubordinate conduct toward non-commissioned officer	do	17
Larceny	do	9
Lying	do	4
Neglect of duty	do	7
Resisting arrest	do	2

The total of cases tried is distributed among organizations as follows:

Regiment or corps.	General.	Inferior trials.	
		Garrison.	Summary.
Hospital Corps.....	2		8
Third Cavalry.....	1		
Fifth Cavalry.....	50	5	422
Seventh Cavalry.....	18	2	107
Tenth Cavalry.....	1		
First Artillery.....	1		
Second Artillery.....	1		
Third Artillery.....	7	6	51
Fourth Artillery.....	1		
First Infantry.....	1		
Fifth Infantry.....	6		40
Eleventh Infantry.....	1		
Sixteenth Infantry.....	8		
Eighteenth Infantry.....	27	5	211
Twenty-third Infantry.....	30	11	191
Twenty-fourth Infantry.....	1		
General service recruits.....	1		1
Indian scouts.....			17
Total.....	152	29	1, 048

The following table affords comparisons as to average enlisted strength of the department and number and percentage of trials for the period stated:

Year.	Average enlisted strength.	Trials by courts-martial.		Percentage of trials.	
		General.	Inferior.	General.	Inferior.
1893.....	1, 806	161	934	8. 91	51. 72
1894.....	1, 932	152	1, 077	7. 87	55. 75

Very respectfully,

F. J. KERNAN,
Captain and Acting Judge-Advocate, U. S. Army.

The JUDGE-ADVOCATE-GENERAL, U. S. ARMY,
Washington, D. C.

REPORT OF CAPT. A. C. SHARPE, ACTING JUDGE-ADVOCATE DEPARTMENT OF THE COLORADO.

HEADQUARTERS DEPARTMENT OF THE COLORADO,
OFFICE OF THE JUDGE-ADVOCATE,
Denver, Colo., August 31, 1894.

SIR: In compliance with paragraph 984, Army Regulations, I have the honor to submit the following report of the business of this office for the year ending this date:

COURTS-MARTIAL.
Officers.

First Lieut. Richard R. Steedman, Sixteenth Infantry, tried for "conduct unbecoming an officer and a gentleman, in violation of the sixty-first article of war." Trial resulted in conviction of "conduct prejudicial to good order and military discipline, in violation of the sixty-second article of war." His case was promulgated in general court-martial orders, No. 33, series 1893, these headquarters.

Enlisted men.

There were 252 enlisted men tried by general courts-martial during this period from the different organizations serving in this department and including deserters from organizations not in the department, as follows:

Hospital Corps	7	Eleventh Infantry	13
First Cavalry	32	Sixteenth Infantry	34
Second Cavalry	50	Twenty-fourth Infantry	34
Ninth Cavalry (two troops)	4	From other organizations	15
Seventh Infantry (six companies) ..	23		
Tenth Infantry (six companies)	40	Total	252

The number of enlisted men tried by general courts-martial at the different posts in the department is shown by the following schedule:

Fort Apache	3	Fort Marcy	28
Fort Bayard	34	San Carlos	
Fort Bowie	3	Fort Stanton	11
Fort Douglas	40	Whipple Barracks	16
Fort Du Chesne	4	Fort Wingate	34
Fort Grant	23		
Fort Huachuca	30	Total	252
Fort Logan	26		

The following schedule exhibits the nature of the offenses for which enlisted men were tried by general courts-martial.

Seventeenth article of war:	
Losing clothing	4
Losing Government property	4
Selling clothing	7
Twentieth article of war:	
Disrespect to commanding officer	6
Twenty-first article of war:	
Attempting to strike superior officer	1
Disobeying superior officer	13
Thirty-first article of war:	
Lying out of quarters	1
Thirty-second article of war:	
Absence without leave	39
Thirty-third article of war:	
Failure to attend drill, roll call, etc	19
Thirty-eighth article of war:	
Drunkenness on duty	22
Thirty-ninth article of war:	
Quitting post	11
Sleeping on post	12
Fortieth article of war:	
Quitting guard	1
Forty-seventh article of war:	
Desertion	43
Sixtieth article of war:	
Selling Government property	1
Sixty-second article of war:	
Allowing prisoner to escape	1
Assault	5
Assault and battery	16
Assault with dangerous or deadly weapon	9
Assault with intent to kill	13
Breach of arrest	5
Committing nuisance	4
Disobeying a commissioned officer	1
Disobeying a non-commissioned officer	15
Disobeying sentinel	2
Disposing of clothing	1
Disrespect to superior officer	2
Drunkenness	21
Drunkenness, causing arrest by civil authorities	1
Embezzlement	1
Escaping from guard or arrest	2

Sixty-second article of war—Continued.

False swearing	1
Fighting	3
Fraudulent enlistment	6
Indecent exposure of person	1
Insubordinate conduct toward non-commissioned officer	11
Larceny	22
Neglect of duty	17
Resisting arrest	4
Selling, losing, or wasting Government property	1
Disorders, etc., charged as "conduct to the prejudice of good order and military discipline" (not included under previous heads)	72

Of the whole number of trials by general courts-martial, 19 resulted in acquittal.
Forty-one men were dishonorably discharged through citation of previous convictions, under paragraph III, General Orders, No. 21, series 1891, Adjutant-General's Office.

Inferior courts.

Posts.	Number of trials by—		Total.
	Summary courts.	Garrison courts.	
Fort Apache.....	57	7	64
Fort Bayard.....	292	15	307
Fort Bowie.....	36		36
Fort Douglas.....	226	1	227
Fort Du Chesne.....	51	1	52
Fort Grant.....	163	1	164
Fort Huachuca.....	264	5	269
Fort Logan.....	289	2	291
Fort Marcy.....	114	2	116
Fort Stanton.....	74		74
San Carlos.....	18		18
Whipple Barracks.....	175		175
Fort Wingate.....	303	4	309
Total	2,064	38	2,102

In 25 cases objection was made to trial by summary court.
The following schedule exhibits the nature of the offenses for which enlisted men were tried by inferior courts:

Violation of the—	Violation of the—
Seventeenth article of war..... 7	Thirty-third article of war 544
Twenty-first article of war 6	Thirty-eighth article of war 93
Thirty-first article of war 30	Fortieth article of war..... 3
Thirty-second article of war.... 531	Sixty-second article of war 814
Number of acquittals by summary courts.....	50
Number of acquittals by garrison courts.....	2
Total	52
Number of different men tried.....	1,177
Average enlisted strength	3,483
Per cent of enlisted men tried by inferior courts	33

DESERTIONS.

There have been 89 desertions from the different organizations serving in this department during the past year, as follows:

Hospital Corps.....	1	First Cavalry	13
Seventh Infantry.....	32	Second Cavalry	15
Tenth Infantry.....	9	Ninth Cavalry	1
Eleventh Infantry.....	4	Twentieth Infantry (deserter from) ..	1
Sixteenth Infantry	10		
Twenty-fourth Infantry	2	Total	89
Average enlisted strength.....			3,483
Per cent of desertions			2.5

REMARKS.

The percentage of trials both by general and inferior courts remains about the same as that of last year, notwithstanding an increase of nearly one thousand in the average enlisted strength of the command over that of the old Department of Arizona.

This unchanging ratio is also generally maintained in the various posts and regiments, indicating the same conditions from year to year, producing like results.

Reports of boards of survey have been received in all cases of desertion, the uniform testimony of which shows that company messes are generally well managed, that the treatment of men is fair and just, and that no cause, except the immorality or inherent defects of character of the man himself, can be discovered for this crime. The facts thus ascertained and certified from every garrison indicate that, with the class of men now brought into the ranks by our present method of recruiting, desertion and other serious offenses have about reached a minimum, and may now be attributed in a great measure to the antecedent history of the recruit, the demoralizing environment of garrisons, and other like conditions beyond the reach of military control. It is believed that no further extension of privilege or added severity of punishment can be relied upon to materially affect the results attained. It seems, however, that minor offenses, such as brief absence without leave, neglect of duty, etc., might with advantage be visited with more serious penalties; a trifling forfeiture of pay or a single day or two of confinement being lightly regarded and apparently inadequate.

A very noticeable falling off in trials was remarked during the recent period of active duty incident to the railway strikes—a circumstance suggesting the value of more diverse occupation, men burdened with too much leisure readily drifting into vicious excesses.

As observed last year, a very large proportion of offenses committed by soldiers are the result of excessive drink. The absolute control of the exchange being in the hands of the post commander, it must be assumed that where the bounds of moderation are exceeded the liquor is obtained outside the garrison, in saloons and other resorts which usually cluster about and infest the environs of every military post.

Attention is invited to the valuable suggestions in the accompanying remarks of troop and company commanders relating to the administration of discipline.

I would also respectfully renew my recommendations of last year relating to amendments of the seventy-fifth, eighty-third, eighty-sixth, and ninety-fourth articles of war, and also desire to repeat the suggestion that provision be made by law for placing every honorably discharged soldier of ten or twelve years' service first in line for appointment in the Government civil service. The reward for apprehending, keeping, and transporting deserters being now reduced to a nominal sum emphasizes the importance of renewed efforts to secure and hold good men in the ranks.

In view of frequent serious outbreaks of military convicts serving sentence at posts, it is believed that the provisions of section 1361, Revised Statutes, should be extended to include all convicts wherever confined or while en route to the prison.

If the doubtful constitutionality of this section renders such legislation inadvisable, provision should be made for the trial and punishment of such offenders by the U. S. courts.

The recent military trial and acquittal of two soldiers at Fort Douglas on a charge of manslaughter, and their subsequent indictment in the local civil court for murder in the second degree, the latter case resulting in their discharge on special plea of *autre fois acquit*, presents an important question as to the jurisdiction of courts-martial. The caution with which military tribunals were first created, and every subsequent step in their evolution, clearly indicates that it was never contemplated that they would ever be permitted, in time of peace at least, to take cognizance of offenses against the criminal justice of the country. And yet this decision of the learned chief justice of Utah, sustained by *dicta* in other cases, and the present practice of courts-martial under the ninety-seventh article of war, show that the civil or criminal aspect of the alleged act is considered and punished by a court-martial no less than the military. If the military court is to remain what it was certainly designed to be, simply a court of honor—an instrumentality for the maintenance of discipline—it should not be permitted in time of peace to inquire into or consider the civil qualifications of a soldier's conduct, and the application of the sixty-second and ninety-seventh articles of war should be limited accordingly. It seems decidedly inappropriate that purely military offenses, with which alone the military courts have to do in time of peace, should be punishable by confinement in a penitentiary.

Very respectfully, your obedient servant,

A. C. SHARPE,

Captain, U. S. Army, Acting Judge-Advocate.

The JUDGE-ADVOCATE-GENERAL, U. S. ARMY,
Washington, D. C.

APPENDIX.

Capt. J. T. Kirkman, Tenth Infantry: "I would recommend that the summary court be authorized to inflict a sentence to hard labor without confinement."

Capt. W. V. Richards, Sixteenth Infantry: "I recommend that when a man has been tried and convicted ten times during his enlistment before a military court that he be recommended for discharge, giving date of offense, sentence, and general character. By the statute of limitation many men slip through their enlistment that are useless to the service. I also recommend that when a man has been tried and convicted by the civil authorities for a misdemeanor of a scandalous nature he shall be similarly recommended for discharge."

Capt. Colon Augur, Second Cavalry: "Trials by summary court prove very satisfactory in regard to discipline."

Capt. F. W. Mansfield, Eleventh Infantry: "Except in exceptional cases, too much work without compensation, too much restraint, and at some posts no social life, are all causes for most summary court trials. Summary court is a great improvement over general court-martial. Proceedings of general court-martial should be reduced to same form of procedure as summary courts."

Capt. D. C. Pearson, Second Cavalry: "I concur in the wisdom of the inception and continuance of the summary court."

Capt. F. U. Robinson, Second Cavalry: "In my opinion the punishments imposed by summary courts are not severe enough."

Capt. E. J. McClernand, Second Cavalry: "The summary court system has proved satisfactory."

Capt. J. A. Buchanan, Eleventh Infantry: "It will be observed that the majority of trials were for violations of the thirty-second and thirty-third articles of war. As a rule, these delinquencies were due to drink. I have noticed that enlisted men are less given to excesses when they receive their pay monthly than when they are paid every two months. I believe payments should be made weekly through company commanders. The credit system at the post exchange should be extended to one-half or more of a man's pay, instead of one-fifth. The exchange checks are as good as money to the man, and can draw more or less at a time, as they like. In my company the credit system obtains, and the men, with scarcely an exception, draw on it to the authorized limit. I would retain no pay except in the first enlistment, and then only one-half of what is now retained."

Capt. G. Le R. Brown, Eleventh Infantry: "Present system of disciplinary courts appears to work very satisfactory. Most of the offenses are of a mild character."

Capt. L. C. Allen, Sixteenth Infantry: "I consider summary court punishment very satisfactory."

Capt. W. L. Finley, Ninth Cavalry: "Punishments for minor offenses entirely inadequate. Men have no fear of them. Length of confinement authorized especially should be increased fourfold."

Capt. William Paulding, Tenth Infantry: "It is suggested that the code of punishment be changed so as to double all fines for trifling offenses, as a severe sentence for first offense often makes a soldier hesitate before committing same a second time."

Capt. Paul Shillock, assistant surgeon: "The trials by summary court proved satisfactory to both the commanding officer of the detachment of the hospital corps and to the men brought before the summary court, on account of the promptness of trial and just punishment."

Capt. F. W. Sibley, Second Cavalry: "The summary court system has proved satisfactory."

First Lieut. C. R. Tyler, adjutant, Sixteenth Infantry: "I consider that the summary court is much superior to other inferior courts, and also believe it would be better for the interests of the service if general courts-martial, in their discretion, could give a different sentence than that allowed by law in the case of persons who have been tried by other courts more than five times within two years."

First Lieut. C. B. Hoppin, Second Cavalry: "In my opinion the summary court system is greatly superior to the one formerly in vogue."

First Lieut. L. M. Brett, adjutant, Second Cavalry: "The workings of the summary court are satisfactory."

First Lieut. I. W. Littell, adjutant, Tenth Infantry: "I am in favor of the summary court, and the working of the same has been very satisfactory so far as my command is concerned. I would respectfully recommend extra fatigue as a punishment in lieu of confinement and stoppage of pay, in the discretion of the summary court officer."

First Lieut. A. L. Mills, adjutant, First Cavalry: "The effect of the summary court upon discipline is believed to be excellent. I think the maximum limit of punishment for offenses under the thirty-second and thirty-third articles of war should be increased. Attention is called to the fact that there have been but two trials of any kind in the band, First Cavalry, since October 1, 1890."

Second Lient. R. B. Wallace, Second Cavalry: "I would consider that discipline would be improved if troop commanders were authorized to impose certain light punishments upon men of their troop in cases not serious enough to require trial by inferior court, but yet require some punishment."

Capt. A. C. Markley, Twenty-fourth Infantry: "I believe that the system works well."

Capt. W. H. W. James, Twenty-fourth Infantry: "I think the present system of trials, by which justice is administered, works very well, and would not recommend any change."

First Lient. Charles Dodge, jr., Twenty-fourth Infantry: "No suggestions to offer, as I think the present system of inferior courts-martial excellent."

Second Lient. C. E. Tayman, Twenty-fourth Infantry: "Soldiers ordered for trial by summary court frequently prefer trial by garrison court, for the reason that the latter court requires copies of proceedings or orders showing previous convictions; whereas summary courts do not. It is believed that in many cases, for instance, all trials for absence under thirty-second and thirty-third articles of war, if punishments were more severe there would be fewer of such offenses; and that the frequency of such offenses is caused by the light punishments awarded to the first."

Second Lient. W. P. Jackson, Twenty-fourth Infantry: "A good institution."

Capt. J. M. Thompson, Twenty-fourth Infantry: "The five previous trial and conviction law is the discipline of the Army."

Very respectfully, your obedient servant,

A. C. SHARPE,
Captain, U. S. Army, Acting Judge-Advocate.

REPORT OF CAPT. EDWIN F. GLENN, ACTING JUDGE-ADVOCATE, DEPARTMENT OF DAKOTA.

HEADQUARTERS DEPARTMENT OF DAKOTA,
OFFICE OF THE JUDGE-ADVOCATE,
St. Paul, Minn., September 1, 1894.

SIR: Under the requirements of paragraph 984, Army Regulations, as amended by General Orders, No. 19, Adjutant-General's Office, 1892, I have the honor to submit the following report, based upon the records of this office for the twelve months ending this date.

During the year one commissioned officer was tried at Fort Missoula, Mont., was convicted in part of the offenses charged, and sentenced to be dismissed.

In this time 295 trials of enlisted men were had by general court-martial, making in all 296 trials, resulting in 18 acquittals and 278 convictions. The trials included 456 separate offenses.

These were alleged as follows:

Seventeenth article of war:	
Losing clothing	3
Losing Government property	13
Selling clothing	4
Twentieth article of war:	
Disrespect to commanding officer	1
Twenty-first article of war:	
Disobeying superior officer	9
Thirty-second article of war:	
Absence without leave	59
Thirty-third article of war:	
Failure to attend drill, roll call, etc.	33
Thirty-eighth article of war:	
Drunkenness on duty	9
Thirty-ninth article of war:	
Quitting post	9
Sleeping on post	2
Fortieth article of war:	
Quitting guard	2
Forty-seventh article of war:	
Desertion	56
Sixtieth article of war:	
Embezzlement	3
Forgery	1
Selling Government property	1
Larceny	5

Sixty-second article of war:

Absence without leave, not chargeable under the thirty-second article of war.....	18
Allowing prisoners to escape.....	2
Assault.....	9
Assault and battery.....	8
Assault with dangerous or deadly weapon.....	2
Assault with intent to kill.....	3
Attempt at suicide.....	1
Breach of arrest.....	4
Committing a nuisance.....	1
Disobeying commissioned officer.....	8
Disobeying non-commissioned officer.....	32
Disrespect to superior officer.....	7
Drunkenness.....	20
Drunkenness, etc., causing arrest by civil authority.....	2
Embezzlement.....	2
False swearing.....	2
Fighting.....	5
Fraudulent enlistments.....	6
Insubordinate conduct toward non-commissioned officer.....	14
Larceny.....	7
Neglect of duty.....	21
Resisting arrest.....	4
Disorders, etc., charged as conduct to the prejudice of good order and military discipline (not included under previous heads).....	68
Total.....	456

The number of trials by garrison courts-martial and the number of trials by summary courts is as follows:

Garrison courts-martial.....	40
Summary courts.....	1, 957
Total inferior courts.....	1, 997

In submitting the above I beg to state that I have not been in charge of this office for a sufficient length of time to make any special recommendations in connection with this report further than is contained in my report to the department commander, inclosed herewith. The submission of five or more previous convictions to the courts has, in my opinion, worked very satisfactorily. In a few instances post commanders have recommended, notwithstanding these previous convictions, that the character of the accused was such as to make it for the best interest of the service to have them tried by summary court. In every instance these recommendations have been complied with by this office.

It is believed that, if post commanders who are familiar with the character of the men against whom five or more previous convictions are to be submitted will make such recommendations, nothing but desirable results will follow in the submission thereof to the general courts-martial. It certainly affords a desirable and practical method for ridding the service of worthless characters.

Very respectfully,

EDWIN F. GLENN,
Captain and Acting Judge-Advocate.

The ACTING JUDGE-ADVOCATE-GENERAL U. S. ARMY,
Washington, D. C.

**REPORT OF THE QUARTERMASTER-GENERAL
OF THE ARMY.**

R E P O R T

O F

THE QUARTERMASTER-GENERAL.

QUARTERMASTER-GENERAL'S OFFICE,
Washington, D. C., September 26, 1894.

SIR: I have the honor to submit the annual report of the Quartermaster's Department for the fiscal year ending June 30, 1894:

By acts of Congress approved February 27 and March 3, 1893, there was appropriated for the service of the Quartermaster's Department for the fiscal year 1893-'94 the sum of	\$8, 031, 880. 00
During the fiscal year there was deposited to the credit of said appropriations amounts received from sales to officers, etc., the sum of...	464, 615. 25

Making a total of	8, 496, 495. 25
Of this amount there was remitted to disbursing officers	\$7, 286, 984. 22
There was paid out on account of settlements made at Treasury of claims and accounts.....	16, 294. 43
	7, 303, 278. 65

Leaving a balance available for payment of outstanding obligations incurred, or fulfillment of contracts properly entered into within the fiscal year.....	1, 193. 216. 60
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On the 1st of July, 1893, there was on hand from regular appropriations for the service of the Quartermaster's Department, pertaining to the fiscal year ending June 30, 1893, the sum of.....	1, 221, 161. 77
And from appropriations pertaining to previous fiscal years, including those for specific and indefinite purposes, the sum of.....	1, 670, 132. 49

Making a total balance on hand from all appropriations July 1, 1893, of.....	2, 891, 294. 26
For specific purposes there was appropriated during the fiscal year ending June 30, 1894.....	453, 523. 50
During the year there was deposited and transferred to credit of the appropriation other than those for 1893-'94 (shown above) the sum of	386, 527. 89

Making a total of	3, 731, 345. 65
Of said amount there was remitted to disbursing officers the sum of	\$1, 821, 387. 93
There was paid out on account of Treasury settlements and transferred the sum of.....	268, 785. 36
There was carried to the surplus fund the sum of	466, 884. 79
	2, 557, 058. 08

Leaving a balance of.....	1, 174, 287. 57
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DUTIES OF THE QUARTERMASTER'S DEPARTMENT.

Under existing laws, the Quartermaster's Department, under the direction of the Secretary of War, provides the Army with military stores and supplies requisite for its use, such as clothing and equipage, tents, band instruments, tableware and mess furniture, equipments for post bakeries, fuel, forage, stationery, lumber, straw for bedding for men and animals, all materials for camp, and for shelter for troops and stores, furniture for barracks, such as bunks, benches, chairs, tables, lockers, heating and cooking stoves for use in public barracks and quarters, tools for mechanics and laborers in the Quartermaster's Department, furniture, text-books, papers, and equipment for post schools, reading matter for post libraries, wagons, ambulances, carts, saddles, harness, water supply, sewerage, plumbing, illuminating supplies, and heating, for all military posts and buildings.

The department is also charged with the duty of transporting, by land and water, troops, munitions of war, equipments, and all articles of military supplies from the place of purchase to the several armies, garrisons, posts, and recruiting places.

Under act of Congress amending section 1661, Revised Statutes, for arming and equipping the militia, this department supplies quartermaster's stores, clothing, and equipage to the militia of the several States and Territories, and transports the same to said States and Territories. It also furnishes transportation for ordnance and ordnance stores issued by the United States to the militia of the several States and Territories. It also transports the property for other Executive Departments on requisitions, payments therefor being made by the respective departments to the carriers upon accounts forwarded through the Quartermaster-General's Office for that purpose.

This department prepares the necessary plans and constructs all buildings at military posts, such as barracks, quarters, storehouses, hospitals, etc., builds wharves, constructs and repairs roads for military purposes, builds all necessary military bridges, provides, by hire or purchase, grounds for military encampments and buildings; contracts for all horses for cavalry, artillery, and for the Indian scouts, and for such infantry and members of the hospital corps in the field campaigns as may be required to be mounted; pays for all incidental expenses of the military service which are not provided by other corps.

The care and maintenance of national cemeteries is an additional duty of this department. It also provides suitable headstones to mark the graves of all soldiers, sailors, or marines who served during the late war, including those who have been buried in private cemeteries and other burial places.

Section 1139, Revised Statutes, makes it the duty of the Quartermaster-General, under the direction of the Secretary of War, to prescribe and enforce a system of accountability for all quartermaster's supplies furnished the Army, its officers, seamen, and marines.

CLOTHING AND EQUIPAGE SUPPLIES.

The sum of \$1,200,000 was appropriated for clothing and equipage for the past fiscal year.

There was placed to the credit of said appropriation during the fiscal year the sum of \$188,101.12 on account of issues to the militia, and the sum of \$132,981.41 from sales to officers, etc., making a total of \$1,521,082.53.

Of this amount there was paid out during the fiscal year the sum of \$1,251,458.68, leaving a balance on hand June 30, 1894, of \$269,623.85, which will be required to meet outstanding obligations.

The issues to the militia of the several States and Territories during the fiscal year amounted to the sum of \$200,057.36.

The following issues were made during the fiscal year, which, with the sales credited to miscellaneous receipts, represent a total loss to the clothing appropriation:

For Indian prisoners of war, Mount Vernon barracks, Ala.....	\$5, 225. 30
To the militia of the District of Columbia	2, 529. 81
Sales of condemned and obsolete clothing and equipage, etc., proceeds, less cost of sale (\$221.30) credited to miscellaneous receipts	31, 005. 78
Total.....	38, 760. 89

BOOTS.

During the last fiscal year several samples of boots differing in pattern, weight, and quality, from the present standard were procured by this department for examination. A selection was made of the sample deemed most suitable for the cavalry service, and 100 pairs, conforming to such sample, were manufactured and sent out for trial to various posts. From reports received these boots have given general satisfaction. The new pattern will be adopted as soon as the stock on hand is exhausted.

The new shoes issued to the enlisted men of the Army are composed of heavy calfskin leather, weighing from 55 to 60 pounds to the dozen skins.

The side linings are of calfskin, and in addition thereto the vamps are lined throughout with canvas duck. These shoes were first issued to the Army during the last fiscal year and have proved most satisfactory. Thus far their distribution has been limited to such sizes and widths as can not be supplied from the stock of wax-upper campaign shoes remaining on hand.

LEGGINGS FOR MOUNTED TROOPS.

The leggings of extra length provided by this department for use of cavalry troops continue to be supplied and to give general satisfaction.

RUBBER CAPES.

A number of rubber capes, intended as a substitute for the rubber ponchos and blankets heretofore supplied to the enlisted men of the Army, were procured during the last fiscal year. Fifty of these capes were sent to the various posts for trial. From reports thus far received opinions differ somewhat as to the merit of the capes.

ALUMINIUM EQUIPMENTS.

The subject of substituting helmet and cap ornaments and battons made of aluminium, in lieu of brass, has been under consideration. No conclusion has yet been reached, but the matter of reducing the weight of such articles, if consistent with their durability, is of sufficient importance to warrant continued investigation.

TRANSPORTATION.

During the fiscal year the Quartermaster's Department furnished transportation for 383,664 persons, 3,708 animals, and 89,855 tons of material.

The sum of \$73,360.27, exclusive of deductions on account of land-grant and bond-aided railroads, was expended during the year for the principal movements of troops in changing stations.

The sum of \$12,571.79 was expended for the transportation of troops in connection with summer encampments, practice marches, etc., and \$25,740.52 for the transportation of enlisted men to engage in target practice and rifle competition.

During the fiscal year there was transported over the bond-aided Pacific railroads, their branches, and leased lines 5,790 persons, 1,175 animals, and 15,794 tons of freight.

Eight steamboats owned by the Quartermaster's Department have been kept in service during the fiscal year at a cost, including repairs, of \$82,296.47, and the sum of \$5,439.77 was expended for the hire of vessels temporarily required.

The sum of \$111,037.36 was expended for roads, walks, grading, and bridges; \$7,057.70 for wharves; and \$92,398.19 for water, sewerage, plumbing, etc.

REGULAR SUPPLIES.

The average cost of cavalry horses was \$99.19 per head, and of artillery horses \$122.66 per head. This department purchased 957 cavalry and 79 artillery horses at a total cost of \$104,623.71, and 36 team horses and 281 mules at a total cost of \$40,800.

The sum of \$168,606.15 was expended for heating and lighting; \$106,873.07 for illuminating supplies; \$3,285.04 for veterinary supplies; \$17,249.58 for wagons, carts, etc.; \$61,347.69 for stoves, ranges, and extra parts; \$19,001.08 for horse and mule shoes, horseshoe nails, and shoeing tools; \$5,194.21 for post bakeries, schools, and gardens; and \$11,726.39 for tableware and kitchen utensils.

BARRACKS AND QUARTERS.

The act of Congress approved February 27, 1893, appropriated the sum of \$700,000 for barracks and quarters. This sum was expended in the construction of officers' quarters, barracks, storehouses, stables, etc., for the repair and alteration of buildings and for rent, etc.

Attention is again called to the insufficiency of the appropriation for this branch of the service. Over one-half of the total appropriation for barracks and quarters has been expended during the year for the repair and alteration of buildings and for rent. The buildings at many of the posts were originally provided to meet a temporary emergency. They are poorly constructed and entirely inadequate for modern use. They require constant repair and the expenditure of large sums every year to maintain them in a fairly habitable condition. This annual expenditure for the repair and alteration of these old structures reduces materially the sum that would otherwise be available from this appropriation for the erection of new buildings. Increased appropriation for this branch of the service will be in the interest of economy and is earnestly recommended, in order that a larger sum may be available for the construction of suitable buildings for the accommodation of the troops to replace the old structures referred to.

There was expended from the appropriations made for the purpose the sum of \$49,767.34 for construction and repair of hospitals at military posts; the sum of \$6,955.76 for the construction and repair of hospital stewards' quarters, and the sum of \$8,000 for shooting galleries and expenses incident thereto.

MILITARY POSTS.

There was appropriated by act of Congress, approved March 3, 1893, the sum of \$350,000 "for the construction of buildings at and the enlargement of such military posts as in the judgment of the Secretary of War may be necessary," and with the balance of \$120,397.30 remaining on hand from prior appropriations, together with the sum of \$100,492 saved from previous allotments, etc., an aggregate of \$570,889.30 was available during the fiscal year for the purpose above stated.

Of this sum the following apportionment was made:

Fort Ethan Allen, Vt.....	\$51,808.04
Madison barracks, N. Y.....	34,200.10
Plattsburg barracks, N. Y.....	42,205.68
Fort Thomas, Ky.....	46,670.10
Fort Sheridan, Ill.....	2,066.00
New post near Little Rock, Ark. (attorneys' fees).....	200.00
Fort Wayne, Mich.....	55,029.84
Fort Crook, Nebr.....	63,845.56
Fort Logan, Colo.....	50,975.00
Presidio of San Francisco, Cal.....	34,035.81
Columbus barracks, Ohio.....	32,718.00
Jefferson barracks, Mo.....	23,266.93
Willels Point, N. Y.....	22,716.00
Miscellaneous expenditures.....	184.15
Balance on hand June 30, 1894.....	110,968.11
Total.....	570,889.30

Some of the buildings authorized at the posts above named have been completed, and the others are either in course of erection or under contract.

FORT HARRISON, MONT.

The following buildings have been contracted for at this post, in addition to the water supply and sewer systems, and a branch railroad:

One double barrack (brick).....	\$30,588.00
Three double sets of officers' quarters (brick).....	32,502.00
Guardhouse (brick).....	5,575.90
One double set noncommissioned staff officers' quarters (brick).....	2,740.00
Quartermaster's stable (brick).....	4,610.00
Bakery (brick).....	1,498.00
Scale house (wood).....	440.00
Quartermasters' and subsistence storehouse (brick).....	6,533.00
Total.....	84,486.90

For plumbing, heating and gas piping in the above buildings an expenditure of \$13,964.71 has been authorized.

MILITARY POST NEAR LITTLE ROCK, ARK.

The work of construction at this post as provided for by acts of Congress, approved April 23 and August 5, 1892, has not yet commenced, but plans of the post, water-supply and sewer systems, and the necessary buildings therefor are in course of preparation.

RESERVATION OF THE PRESIDIO, SAN FRANCISCO, CAL.

Out of the balance of \$4,491.16 remaining on hand at the beginning of the fiscal year from the appropriation for this reservation, provided by act of Congress approved August 5, 1892, the sum of \$1,738.90 was expended during the year for purchasing, planting, and cultivating trees, repairing fences, etc.

The trees generally are in a satisfactory condition.

DRILL HALLS.

During the last fiscal year this department has completed the infantry drill hall at Fort Sheridan, Ill., which has proved very satisfactory.

In the winter months the hall was occupied daily for mounting the guard, and was in constant use for musters, inspections, company drills, gallery practice, and gymnasium. Each hour of the day was designated for certain organizations to perform various official duties, with very satisfactory results.

Similar drill halls should be erected at all large posts as funds will permit.

RESERVATIONS.

The following reservation has been transferred to the Interior Department for disposition under the act approved July 5, 1884:

Fort Randall, S. Dak., 92,160 acres.

The post at Camp Poplar River, Montana, has been abandoned and the same, with the buildings, has been turned over to the Interior Department for Indian school purposes.

The site of old Fort Bliss Cemetery, Texas, has been transferred to the city of El Paso for park and other public use, in accordance with the provisions of the act of Congress approved March 3, 1893.

Under the act approved March 3, 1891, a site for a military post, containing 155.34 acres, has been purchased at Eagle Pass, Tex. (old Fort Duncan), at a cost of \$20,000.

NATIONAL CEMETERIES.

There are 83 national cemeteries with 73 superintendents. During the fiscal year 7,637 white marble headstones were provided to mark the graves of Union soldiers, sailors, and marines buried in national, post, city, and village cemeteries.

The necessary repairs have been made to the lodges, outbuildings, gates, inclosing walls, walks, water supply, etc., at the various cemeteries, and at all of them the grounds have been kept in good order.

A contract has been made for the construction of a stone superintendent's lodge and a cistern at the Custer Battlefield National Cemetery, and the work commenced.

The outbuildings contracted for during the preceding fiscal year to be erected at the Fort Leavenworth, Kans., Soldiers' Home, District of Columbia, Culpeper and Yorktown, Va., and Grafton, W. Va., national cemeteries, and the receiving vault at the Arlington, Virginia, national cemetery, have been completed.

A new brick stable has been erected at the Jefferson barracks, Mo., national cemetery, to replace a similar structure destroyed by fire, December 13, 1893.

The sum of \$3,636.21 was expended in necessary repairs to roadways to national cemeteries, constructed by special authority of Congress.

The roadway from Mound City National Cemetery to Mound Junction, a distance of 14,469 feet, authorized by act of Congress approved March 3, 1891, has been completed at a total cost of \$9,974.10.

APPROACHES TO ARLINGTON, VIRGINIA, NATIONAL CEMETERY AND PARK.

The necessity for improved approaches to the Arlington National Cemetery and Park, as referred to in my last annual report, is again earnestly urged upon Congress, and an appropriation therefor recommended. Estimates made by engineers of this Department for the construction of good macadamized roads, of a substantial and durable character, fix the cost at \$50,000.

The present intolerable condition of the approaches to this historical spot, which forms a part of one of the most beautiful parks in the country, and where so many of the nation's heroes are buried, should be remedied at the earliest practicable date, so as to render it more accessible to the people of the city of Washington, and to the thousands of visitors to the national capital from all parts of the country.

In this connection I also renew my recommendation of last year, that an appropriation be made by Congress for the construction of a bridge over the Potomac, at or about the terminus of New York avenue, near Observatory Hill, which, if constructed, will not only furnish a short and direct route to the cemetery and park, but also be a means of direct and rapid communication between the capital and the important military post of Fort Myer, Va., which adjoins the cemetery on the north. The value from a military point of view of a bridge at this place is apparent.

ANTIETAM BATTLEFIELD.

In carrying out the provisions of the acts of Congress approved August 30, 1890, August 5, 1892, and March 3, 1893, the work of surveying, locating, and preserving the lines of battle of the Army of the Potomac and of the Army of Northern Virginia at Antietam, Md., has been confined chiefly to fixing accurately the positions of the several brigades of the two armies on the night of September 16 and 17, 1862, just prior to the commencement of the battle, and preparing the last of a series of three maps which will show the extreme advance of the Union Army on September 17. A vast amount of correspondence has been carried on with a view to securing reliable information before the maps are finally completed. No idea of the work done is to be obtained by an inspection of the battlefield, and but little more will be visible until the land (upon which permanent markers of stone will be placed) is acquired by the Government and the avenues are laid out.

Eight hundred acres will have to be acquired by the Government, and after deducting the amount of money on hand the sum of \$50,000 will be necessary to finish the work.

When the positions of the several brigades of the two armies and their batteries—a total of 232—are located correctly, and are designated by temporary markers, the work will be largely completed. The temporary markers will then be replaced by permanent tablets or monuments. The Ordnance Department has furnished the board with condemned cannon sufficient to mark the position of the batteries of each army. These cannon are now at Sharpsburg, and will be placed in position when the land where the batteries fought is acquired by the Government.

GETTYSBURG BATTLEFIELD.

The purchase of land for sites for monuments to indicate the positions occupied by commands of the regular Army at the battle of Gettysburg, and for approach roads thereto, as provided by acts approved March 3, 1887, October 2, 1888, and March 2, 1889, has been completed.

Each site has been marked with an iron tablet inscribed with the name of the command and the date of its engagement, and at each site has been placed a cannon mounted on an iron gun carriage.

HALL OF RECORDS.

Attention is again called to the crowded condition of the rooms used for storing papers and records in the War Department, and the recommendation that a suitable fireproof building be erected in some convenient locality, to contain the records of all the Executive Departments, is again renewed.

The act (public, No. 44) approved March 29, 1894, "to regulate the making of property returns by officers of the Government," provided—

That instead of forwarding to the accounting officers of the Treasury Department returns of public property intrusted to the possession of officers or agents, the Quartermaster-General, the Commissary-General of Subsistence, the Surgeon-General, the Chief of Engineers, the Chief of Ordnance, the Chief Signal Officer, the Paymaster-General of the Navy, the Commissioner of Indian Affairs, or other like chief officers in any Department, by, through, or under whom stores, supplies, and other public property are received for distribution, or whose duty it is to receive or examine returns of such property, shall certify to the proper accounting officer of the Treasury Department, for debiting on the proper account, any charge against any officer or agent intrusted with public property, arising from any loss, accruing by his fault, to the Government as to the property so intrusted to him.

Under the operation of this law some means will have to be provided for the storage in the War Department of the future accumulation of records and accounts which were formerly turned over to the accounting officers of the Treasury. The storage space in the War Department is utterly inadequate for the purpose. As pertinent to this subject, the following letter from the Third Auditor to the Secretary of the Treasury is quoted:

TREASURY DEPARTMENT, OFFICE OF THE THIRD AUDITOR,
Washington, D. C., July 18, 1894.

I inclose herein copy of act (Public No. 44) entitled "An act to regulate the making of property returns by officers of the Government," approved March 29, 1894.

As it was evidently the intention of Congress by this act to relieve this office in the future of any care of property returns belonging to the offices of the Quartermaster-General, Commissary-General, and Chief of Engineers, and of all responsibility therefor, I think it right that all such returns now on the files of this office should be removed, so that the files may be relieved in some degree of the congestion which such returns help to produce.

Besides a very large number of claims and accounts, there are received annually in this office nearly four million pension vouchers, and it has become almost impossible to dispose of them. All shelf room is filled to its utmost capacity, and it has become necessary to deposit accounts upon the floors, where they can not be properly attended to, and are likely to be destroyed by mice, or otherwise injured.

I therefore respectfully request that you ask the Secretary of War to withdraw all property accounts pertaining to the above-named offices and now on the files of this office, in order that some room may be made for the papers which legitimately belong here.

If this shall be done, the files room remaining will still be entirely inadequate to the needs of the office, and I consequently further ask you to take under consideration its necessities in that respect, and that further room for such purposes may be provided at an early date.

Respectfully yours,

SAM'L BLACKWELL,
Auditor.

Hon. JOHN G. CARLISLE,
Secretary of the Treasury.

Should Congress authorize the construction of a hall of records, the question of its location is one of great importance, as the building should be situated near the Executive Departments. A site on Seventeenth street, south of the new Corcoran Art Gallery, or south of Pennsylvania avenue on Fifteenth street, would be a most appropriate location for the new building, as it would be in close proximity to six of the eight large Executive Departments. It is hoped that favorable action in this matter will be taken by Congress at an early date.

SUBSTITUTION OF PRESS COPIES FOR DUPLICATE RETURNS.

During the past fiscal year a considerable saving in time and clerical labor has been effected by directing all officers of the Quartermaster's Department rendering money accounts and property returns to make but one written copy of papers relating to such accounts, substituting a press copy for the duplicate retained by the officer.

A further saving of work has also been effected by substituting for the record letters sent and index, kept by officers of the Quartermaster's Department, a letterpress book, in which all correspondence will be copied and indexed.

CONSOLIDATED MESSES.

In addition to the consolidated messes mentioned in my last annual report, this system has been established at the following posts during the past fiscal year: Fort Bliss, Tex.; Madison Barracks, N. Y.; Fort Sam Houston, Tex.; Fort Leavenworth, Kans.; and Plattsburg Barracks, N. Y. Time and experience are fast demonstrating the wisdom of the change.

REDUCTION IN THE CLERICAL FORCE.

Under the provisions of the act of Congress approved July 31, 1894, making appropriation for the legislative, executive, and judicial expenses of the Government, for the fiscal year ending June 30, 1894, this office suffered a reduction of 12 in the clerical force, as follows: 2 clerks of class 4, 2 clerks of class 3, 4 clerks of class 2, 4 clerks of class \$1,000.

This loss of clerical assistance has greatly retarded the work of the office, and experience has shown that the business with which this office is charged can not be efficiently conducted without additional clerical help. With a view to providing the necessary assistance, I have included in the estimates for the next fiscal year the following additional clerks: 3 clerks of class 2, 3 clerks of class 1, 2 clerks of class \$1,000.

With this additional force it is believed that the work of the office can be efficiently performed.

It is gratifying to testify to the faithful and efficient services rendered by the officers and employes of this department, and to acknowledge their valuable assistance.

Attention is invited to the accompanying reports of the officers on duty in this office.

Respectfully,

R. N. BATCHELDER,
Quartermaster-General, U. S. Army.

Hon. DANIEL S. LAMONT,
Secretary of War.

List of papers accompanying the annual report of the Quartermaster-General for the fiscal year ending June 30, 1894.

1. Report of Lieut. Col. M. I. Ludington, deputy quartermaster-general, U. S. Army, of the operations of the finance, inspection, money, and property accounts, clothing returns, and clothing supply branches, Quartermaster-General's Office, for the fiscal year ending June 30, 1894.

A. Statement showing articles of clothing and equipage and material on hand at the issuing depots of the Quartermaster's Department, June 30, 1893, the quantities purchased, manufactured, received from posts and depots, taken up, sold, transferred to general depots, expended, issued to the Army and the militia, and the quantities remaining in depots June 30, 1894.

2. Report of Maj. D. D. Wheeler, quartermaster, U. S. Army, of the operations of the transportation and regular supplies branches, Quartermaster-General's Office, for the fiscal year ending June 30, 1894.

3. Report of Capt. W. S. Patten, assistant quartermaster, U. S. Army, of the operations of the miscellaneous claims, cemeterial, and mail and records branches, Quartermaster-General's Office, for the fiscal year ending June 30, 1894.

A. Statement of disbursement of appropriation, national cemeteries, during the fiscal year ending June 30, 1894.

4. Report of Capt. C. P. Miller, assistant quartermaster, U. S. Army, of the operations of the barracks and quarters branch, Quartermaster-General's Office, for the fiscal year ending June 30, 1894.

A. Statement showing property rented by the Quartermaster's Department during the fiscal year ending June 30, 1894.

5. Report of Capt. O. F. Long, assistant quartermaster, U. S. Army, of the operations of the reservation branch, Quartermaster-General's Office, for the fiscal year ending June 30, 1894.

A. Statement of expenditures authorized for water, sewerage, and plumbing, chargeable to appropriation "Army transportation," for the fiscal year ending June 30, 1894.

B. Statement of expenditures authorized for lighting, heating, etc., chargeable to appropriation "Regular supplies," for the fiscal year ending June 30, 1894.

C. Statement showing military reservations turned over to the Interior Department or otherwise disposed of from 1858 to June 30, 1894.

D. Statement giving alphabetical list of military reservations, showing location, size, how occupied, accommodations for officers and men, etc., on June 30, 1894.

WAR DEPARTMENT,
QUARTERMASTER-GENERAL'S OFFICE,
Washington, D. C., August 15, 1894.

GENERAL: I have the honor to submit a report of the operations of the finance, inspection, money, and property accounts, clothing and equipage returns, and clothing supply branches for the fiscal year ending June 30, 1894.

FINANCE.

This branch has charge of matters relating to the procurement and distribution of funds, the compilation and preparation for Congress of the annual estimates of funds for the service of the Quartermaster's Department, and for funds required for the Quartermaster-General's office; the examination of estimates of funds received from disbursing officers, and the issue of requisitions in favor of such disbursing officers; the action upon settlements made at the Treasury of claims and accounts pertaining to the Quartermaster's Department; the abstracting of weekly and monthly statements of funds for comparison with the Treasury records, and the conducting of the necessary correspondence and the keeping of the prescribed records connected with the foregoing.

Financial statement for fiscal year ending June 30, 1894.

[From the balance books upon which all debits and credits are recorded.]

Appropriations.	Balance in Treasury undrawn July 1, 1893.	Appropriated.		Placed to credit of appropriations during the year, being the proceeds of sales to officers, etc.	Placed to credit of appropriations by Treasury transfer warrants.	Total to be accounted for.	Remitted to disbursing officers.	Requisitions issued on settlements made at Treasury of claims and accounts.	Amounts charged against appropriations by Treasury transfer warrants.	Amounts carried to surplus fund, act June 20, 1874.	Balance in Treasury undrawn June 30, 1894, and available for outstanding obligations.	Total accounted for.
		Amount.	Date of act.									
1871 and prior years, transferred account.												
Transportation of officers and their baggage				\$19.10		\$19.10				\$19.10		\$19.10
1883-'90.												
Transportation of the Army and its supplies..	\$2,997.21			1.00		2,998.21		\$2,911.21			\$87.00	2,998.21
1890-'91.												
Construction and repair of hospitals.....	402.77					402.77					402.77	402.77
1891 and prior years.												
Regular supplies				2,261.41		2,261.41				2,261.41		2,261.41
Incidental expenses				344.82		344.82				344.82		344.82
Barracks and quarters....				11.88		11.88				11.88		11.88
Transportation of the Army and its supplies..				769.67		769.67				769.67		769.67
Clothing, camp and garrison equipage.....				111.21		111.21				111.21		111.21
Shooting galleries and ranges.....				.24		.24				.24		.24
Total				3,499.23		3,499.23				3,499.23		3,499.23

Financial statement for fiscal year ending June 30, 1894—Continued.

Appropriations.	Balance in Treasury undrawn July 1, 1893.	Appropriated.		Placed to credit of appropriations during the year, being the proceeds of sales to officers, etc.	Placed to credit of appropriations by Treasury transfer warrants.	Total to be accounted for.	Remitted to disbursing officers.	Requisitions issued on settlements made at Treasury of claims and accounts.	Amounts charged against appropriations by Treasury transfer warrants.	Amounts carried to surplus fund, act June 20, 1874.	Balance in Treasury undrawn June 30, 1894, and available for outstanding obligations.	Total accounted for.
		Amount.	Date of act.									
1891 and prior years, transfer account.												
Regular supplies				\$1,096.44		\$1,096.44			\$1,096.44			\$1,096.44
Incidental expenses				514.46		514.46		\$246.05	268.41			514.46
Transportation of the Army and its supplies				444.86		444.86		16.82	428.04			444.86
National cemeteries					\$1.00	1.00		1.00				1.00
Total				2,055.76	1.00	2,056.76		263.87	1,792.89			2,056.76
1891-'93.												
Regular supplies	\$236,682.78			872.57		237,555.35	\$3,119.04	945.82		\$233,490.49		237,555.35
Incidental expenses	37,096.54			485.61		37,582.15	5,985.82	222.36		81,373.97		37,582.15
Horses for cavalry and artillery	44,759.90					44,759.90						44,759.90
Barracks and quarters	6,923.23			13.47		6,936.70		1,691.86		44,759.90		6,936.70
Transportation of the Army and its supplies	184,305.78			4,953.30		189,259.08	14,633.34	57,560.63		117,065.11		189,259.08
Clothing, camp and garrison equipage	32,919.90			591.78		33,511.68	5,000.00	1.13		28,510.55		33,511.68
Construction and repair of hospitals	1,504.36					1,504.36				1,504.36		1,504.36
National cemeteries	301.35					301.35	.25	166.96		134.14		301.35
Pay of superintendents of national cemeteries	949.50					949.50				949.50		949.50
Shooting galleries and ranges	206.03					206.03				206.03		206.03
Quarters for hospital stewards	127.57					127.57				127.57		127.57
Total	545,776.94			6,916.73		552,693.67	28,738.45	60,588.76		463,366.46		552,693.67

Financial statement for fiscal year ending June 30, 1894—Continued.

Appropriations.	Balance in Treasury undrawn July 1, 1893.	Appropriated.		Placed to credit of appropriations during the year, being the proceeds of sales to officers, etc.	Placed to credit of appropriations by Treasury transfer warrants.	Total to be accounted for.	Remitted to disbursing officers.	Requisitions issued on settlements made at Treasury of claims and accounts.	Amounts charged against appropriations by Treasury transfer warrants.	Amounts carried to surplus fund, act June 20, 1874.	Balance in Treasury undrawn June 30, 1894, and available for outstanding obligations.	Total accounted for.
		Amount.	Date of act.									
<i>Indefinite or special.</i>												
Awards to certain citizens of Jefferson County, Ky.		\$6,523.50	Mar. 3, 1893			\$6,523.50		\$6,523.50				\$6,523.50
Bellevue rifle range, Omaha, Nebr.		500.00	Mar. 17, 1893			500.00					\$500.00	500.00
Battle lines and sites for tablets at Antietam	\$19,310.00	15,000.00	Mar. 3, 1893			34,310.00	\$8,000.00				26,310.00	34,310.00
Burial of indigent soldiers		1,500.00	do			1,500.00	1,000.00				500.00	1,500.00
Headstones for graves of soldiers	27,311.08	25,000.00	do			52,311.08	21,901.25	617.84			29,791.99	52,311.08
Military posts, transfer account				\$10.12		10.12			\$10.12			10.12
Military posts	326,601.55	350,000.00	Mar. 3, 1893	22,391.74		698,993.29	593,546.86	1,310.00			104,136.43	698,993.29
Military post near Newport, Ky., buildings	13,339.51					13,339.51					13,339.51	13,339.51
Military post, at Fort Omaha, Nebr.	71,733.54					71,733.54	71,733.54					71,733.54
Military post, Fort Bliss, Tex.	829.31					829.31	829.31					829.31
Military post, Fort Sidney, Nebr.	15,004.86					15,004.86					15,004.86	15,004.86
Military post, Atlanta, Ga.	75,000.00					75,000.00					75,000.00	75,000.00
Military post, Fort Snelling, Minn.	15,000.00					15,000.00					15,000.00	15,000.00
Military post, Plattsburg, N. Y.	174,850.00					174,850.00	174,850.00					174,850.00
Military post at Eagle Pass, Tex., site	20,000.00					20,000.00	20,000.00					20,000.00
Military post, Helena, Mont.	100,000.00					100,000.00	12,000.00				88,000.00	100,000.00
Military storehouse, Omaha, Nebr.	30,000.00	30,000.00	Mar. 3, 1893			60,000.00	25,000.00				35,000.00	60,000.00
Monuments or tablets at Gettysburg	13,286.60					13,286.60	10,500.00				2,786.60	13,286.60

Officers' quarters, military post at Columbus, Ohio.....	471.90					471.90														471.90
Purchase of buildings at military posts.....	9,977.48					9,977.48														9,977.48
Purchase of land for target ranges, Fort McPherson, Ga.....	16,500.00					16,500.00														16,500.00
Purchase of Fort Brown reservation.....	160,000.00					160,000.00														160,000.00
Reconstructing bridge, Niobrara, Nebr.....		7,000.00																		7,000.00
Road to the national cemetery presidio of San Francisco, Cal.....	3,680.00	10,000.00																		13,680.00
Road to the national cemetery at Hampton, Va.....	2,000.00																			2,000.00
Repairing roads to national cemeteries.....	22,089.77	8,000.00																		30,089.77
Water supply, Fort D. A. Russell, Wyo.....	2,958.15																			2,958.15
Total indefinite.....	1,119,943.75	453,523.50					22,401.86													1,595,869.11
Army transportation, Pacific roads.																				
1891 and prior years.....																				865.19
1892.....																				58,671.61
1893.....																				63,830.98
1894.....																				16,537.62
Total.....							96.39													139,905.40
Grand total.....	2,891,294.26	8,485,403.50					711,838.13													460,884.79
																				2,367,504.17
																				12,227,840.90

NOTE.—The records of this office show that of the amount appropriated for "Claims for quartermaster stores and commissary supplies," act of March 3, 1887, the sum of \$75 has been paid on settlement made at the Treasury during this fiscal year.

The records of this office show the following amounts remitted from regular and from indefinite or special appropriations:

Remitted from regular appropriations.

Departments, etc.	Regular supplies.	Incidental expenses.	Horses for cavalry and artillery.	Barracks and quarters.	Transportation of the Army and its supplies.	Clothing, camp and garrison equipage.	Construction and repair of hospitals.	National cemeteries.	Pay of superintendents of national cemeteries.	Shooting galleries and ranges.	Quarters for hospital stewards.	Total.
Department of the East	\$248,526.39	\$77,608.61		\$91,251.37	\$204,793.63	\$361.80	\$28,463.31			\$918.59	\$869.94	\$652,793.64
Department of the Missouri	266,397.15	68,599.38	99,345.75	94,619.51	173,976.93	58.40	3,371.90	\$15.00		1,624.82	698.26	618,707.10
Department of Texas	150,353.69	36,429.78	17,861.47	53,306.11	129,741.69	41.00	2,458.38			839.33	60.00	391,091.45
Department of the Platte	239,333.65	51,612.19	8,136.27	58,334.64	148,150.67	234.81	1,629.50			736.89	50.00	508,218.62
Department of Dakota	422,938.32	57,446.00	10,511.91	49,619.97	221,212.44	1,105.00	1,776.02			382.29	2,051.75	767,043.70
Department of California	94,601.46	27,809.61	1,820.00	25,510.67	91,423.30	132.00	1,048.68			1,447.78	13.00	243,806.50
Department of the Columbia	138,045.38	27,030.75	7,547.80	20,308.14	60,971.58	39.00	989.65			686.97		255,619.27
Department of the Colorado	360,742.27	49,240.25	125.00	52,252.27	287,871.40	31.00	3,574.59			1,343.93	977.08	756,157.79
Depot at New York	64,034.26	29,062.00	2,515.20	3,944.41	174,022.95	10.70		1,334.56	\$900.00			275,824.08
Depot at Philadelphia	21,165.98	25,029.39		3,065.08	53,103.79	958,385.58		2,674.09	2,280.00			1,065,703.91
Depot at Washington, D. C.	26,848.62	29,094.92		4,906.94	51,250.54			52,007.46	20,440.00			184,548.48
Depot at Jeffersonville	105,112.40	37,688.04		234.50	99,083.40			5,548.43	3,840.00			391,434.70
Depot at St. Louis	12,408.51	16,355.02	46,075.30	2,843.56	121,879.40			9,480.92	11,075.67			225,927.10
Depot at San Francisco	15,762.05	19,323.25		13,664.32	35,596.28			748.76	720.00			222,744.91
Columbus barracks, Ohio	20,109.02	7,359.74		6,095.25	29,349.82		396.00				24.90	63,334.73
Jefferson barracks, Mo.	29,345.36	7,905.00		11,356.17	19,258.83		2,006.01				2,255.00	72,238.37
West Point, N. Y.	24,248.35	10,500.00			4,824.45					69.40		39,650.20
Willetts Point, New York Harbor	848.79	2,030.00		3,441.75	3,361.05		300.00					9,991.59
Davids Island, New York Harbor	2,154.76	4,503.00		5,000.00	16,591.66						75.00	28,324.42
Springfield Armory, Mass.	2,021.37	331.81			23.88							2,377.06
Military prison, Kans.	3,923.74	2,119.10			2,549.33							16,854.66
Hot Springs, Ark.	5,609.10	2,673.04		291.90	1,429.46							11,913.42
Plattsburg barracks, N. Y.	30,877.07	7,024.87		33,445.70	27,761.19							99,108.83
Madison barracks, N. Y.	11,322.98	3,433.21		3,727.45	17,265.49							35,749.13
Mount Vernon barracks, Ala.		446.66		500.00	5,476.00							6,422.66
Fort McPherson, Ga.	1,504.26	3,670.00		300.00	320.00			26,277.22	21,605.00			53,676.48
Fort Sheridan, Ill.	2,858.97	5,233.24		262.85	9,979.77		2,380.26					20,715.09
Fort Riley, Kans.	8,133.31	3,985.00		32,261.17	7,394.48							51,773.96
Fort Thomas, Ky.	12,776.78	3,592.65		10,002.07	20,774.00							47,145.50
Fort Brady, Mich.	252.00	4,456.23		240.00	502.75							5,450.98
Fort Bliss, Tex.	560.00	1,766.80		522.50	2,113.64							4,962.94
Los Angeles, Cal.		683.33										683.33
Fort Ethan Allen, Vt.	10,644.22	5,230.50		49,558.18	36,042.23							101,475.13
Dover powder depot, N. J.	122.16											122.16
Fort Crook, Nebr.	7,059.16	603.01			7,705.94							15,368.11
Fort Harrison, Mont.	170.30	1,938.25		362.00	19,006.23							21,476.78
Fort Wayne, Mich.	16.28	699.30		19.25	219.39							954.23
Little Rock, Ark.	9.00	277.99			30.00							316.99

Allegheny arsenal, Pa.....	615.46	20.00	77.86	.....	.....	.....	713.33
Augusta arsenal, Ga.....	798.57	152.55	45.00	.....	.....	.....	991.12
Columbia arsenal, Tenn.....	828.30	20.50	55.00	.....	.....	.....	903.80
Frankford arsenal, Pa.....	.....	10.00	999.96	.....	.....	.....	1,009.96
Indianapolis arsenal, Ind.....	278.85	2.29	.....	.....	.....	.....	280.65
Kennebec arsenal, Me.....	1,348.00	56.00	96.00	.....	.....	.....	1,500.00
Rock Island arsenal, Ill.....	1,635.84	157.87	1,231.75	.....	.....	.....	3,144.96
Watertown arsenal, Mass.....	2,138.15	65.77	399.11	.....	.....	.....	2,603.03
Watervliet arsenal, N. Y.....	2,682.30	370.85	828.35	.....	.....	.....	3,881.50
Benicia arsenal, Cal.....	1,574.34	139.55	534.00	.....	.....	.....	2,247.89
Total.....	2,352,730.93	633,787.30	2,089,324.62	1,251,458.68	50,304.22	8,206.44	7,074.93
						8,050.00	7,286,984.22

Remitted from indefinite or special appropriations.

Departments, etc.	Military posts.	Headstones for graves of soldiers.	Military post, Fort Omaha, Nebr.	Repairing roads to National Cemeteries.	Burial of indigent soldiers.	Battle lines and sites for tablets at Antietam.	Monuments or tablets at Gettysburg.	Road to National Cemetery, Presidio of San Francisco, Cal.	Military post, Fort Bliss, Tex.	Military post, Plattsburg, N. Y.	Military post, Eagle Pass, Tex., site.	Military storehouse, Omaha, Nebr.	Military post, Helena, Mont.	Total.
Department of the East		\$1		\$90.00										\$91.00
Department of the Missouri	\$904.00													904.00
Department of Texas											\$20,000.00			20,000.00
Department of the Platte	4,224.82													4,224.82
Department of Dakota	481.65													481.65
Department of California	34,035.81													34,035.81
Department of the Columbia		\$67.50												67.50
Department of the Colorado	50,995.34													50,995.34
Depot at New York		21,502.75												21,502.75
Depot at Washington		275.00		2,833.26	\$1,000.00	\$8,000.00	\$10,500.00							22,608.26
Depot at St. Louis		55.00		1,749.45				\$1,910.00						1,904.45
Depot at San Francisco														1,910.00
Columbus barracks, Ohio	21,530.93													21,530.99
Jefferson barracks, Mo.	23,261.50													23,261.50
Willets Point	27,950.00													27,950.00
Plattsburg barracks	30,689.71									\$174,850.00				205,539.71
Madison barracks	75,601.39			6,963.85										75,601.39
Fort McPherson														6,963.85
Fort Sheridan	2,316.00													2,316.00
Fort Thomas	46,697.25													46,697.25
Fort Brady	12,674.52													12,674.52
Fort Bliss	36,714.74								\$829.31					37,544.05
Fort Ethan Allen	108,854.60													108,854.60
Fort Crook	116,584.70		\$71,733.54									\$25,000.00		213,318.24
Fort Harrison													\$12,000.00	12,000.00
Fort Wayne	29.84													29.84
Total	593,546.86	21,901.25	71,733.54	11,696.56	1,000.00	8,000.00	10,500.00	1,910.00	829.31	174,850.00	20,000.00	25,000.00	12,000.00	952,907.52

INSPECTION.

The work of this branch is largely of a miscellaneous character. It takes cognizance of all matters relating to the personnel of the officers of the Quartermaster's Department, their assignment to stations, etc., and also as to clerks and others employed in the office of the Quartermaster-General and in the Quartermaster's Department at large; prepares the biennial and annual reports, monthly returns of officers of the Quartermaster's Department, the monthly and semimonthly pay rolls of the employés in this office, and acts on all matters pertaining to post quartermaster sergeants and to the detachment of Army service men, Quartermaster's Department, at West Point, N. Y.

The 80 post quartermaster sergeants and the 117 men composing the detachment of Army service men, Quartermaster's Department, are reported to have generally performed satisfactory service during the past fiscal year. As to the latter organization Capt. W. H. Miller, assistant quartermaster, commanding officer, reports as follows:

Number of men in detachment July 1, 1893.....	113
Number of men transferred or discharged during fiscal year ending June 30, 1894.....	30
	<hr/>
	83
Number of men enlisted and transferred to detachment during fiscal year ending June 30, 1894.....	33
	<hr/>
	116
Number of vacancies in detachment June 30, 1894.....	1
	<hr/>
Total	117

During the past fiscal year 88,655 books, pamphlets, orders, circulars, and other printed matter were distributed through this branch for the official use and information of officers of the Quartermaster's Department.

The officers of the Quartermaster's Department, regular establishment, are as follows: 1 Quartermaster-General, 4 assistant quartermasters-general, 8 deputy quartermasters-general, 14 quartermasters, 30 assistant quartermasters, 1 military storekeeper; total, 58.

MONEY AND PROPERTY ACCOUNTS.

The duties of this branch consist of the administrative examination of the money accounts rendered by officers serving in the Quartermaster's Department before their transmission to the accounting officers of the Treasury for final action, and also the examination of returns of quartermaster's stores rendered by the same officers.

Under the act of Congress approved March 29, 1894, it was provided that instead of forwarding to the accounting officers of the Treasury Department the returns of quartermaster's stores rendered by the officers of the Quartermaster's Department, the Quartermaster-General—

shall certify to the proper accounting officer of the Treasury Department, for debiting on the proper account, any charge against any officer * * * intrusted with public property, arising from any loss, accruing by his fault, to the Government as to the property so intrusted to him.

That said certificate shall set forth the condition of such officer's * * * property returns; that it includes all charges made up to its date and not previously certified; that he has had a reasonable opportunity to be heard and has not been relieved of responsibility; the effect of such certificate, when received, shall be the same as if the facts therein set forth had been ascertained by the accounting officers of the Treasury Department in accounting.

This branch also takes action on certificates of deposits of funds pertaining to the appropriations for the Quartermaster's Department received from sales to officers and soldiers, sales at auction, and other sources, and upon boards of survey and inventory and inspection reports of quartermaster's stores no longer fit for issue or use.

The following statement exhibits the number of money accounts and returns of quartermaster's stores received and disposed of during the fiscal year:

Money accounts on hand July 1, 1893.....	1, 334
Received during the year.....	3, 364
Total	4, 698
Examined and sent to the Auditor	4, 617
Remaining on hand July 1, 1894	81
Returns of quartermaster's stores on hand July 1, 1894	1, 820
Received during the year.....	3, 586
Total	5, 406
Examined and sent to the Auditor to April 30, 1894.....	2, 682
Examined and temporarily filed in Quartermaster-General's Office from May 1 to June 30, 1894.....	792
Total	3, 474
Remaining on hand unexamined July 1, 1894	1, 932

CLOTHING AND EQUIPAGE RETURNS.

In this branch returns of clothing and equipage are examined and the necessary correspondence relative thereto conducted.

The following statement shows the amount of work accomplished during the fiscal year ending June 30, 1894:

Returns on hand June 30, 1893.....	807
Returns not heretofore included.....	675
Returns received during fiscal year.....	1, 482
Total	3, 650
Total	5, 132
Returns examined during fiscal year 1894.....	4, 049
Returns on hand June 30, 1894.....	1, 083
Letters written	7, 253
Transfers and sales verified	26, 279
Auditor's settlements registered.....	4, 523
Replies to remarks examined.....	1, 315

Prior to the passage of the act of Congress of March 29, 1894, returns of clothing and equipage were forwarded to the Second Auditor of the Treasury for settlement, but are now filed in this office in conformity with the provisions of said law, beginning with those of fourth quarter fiscal year 1894.

CLOTHING AND EQUIPAGE SUPPLIES.

In this branch all matters relating to the purchase, manufacture, and issue of clothing and equipage to the Army, and to the militia of the States and Territories, receive attention.

Receipts and expenditures.

The appropriation for clothing and equipage for the last fiscal year was	\$1, 200, 000. 00
There were placed to the credit of said appropriation, during the fiscal year, the following amounts, viz:	
From reimbursements on account of issues to the militia of the States and Territories under the provisions of section 1661, Revised Statutes	188, 101. 12
From collections by pay department on account of clothing overdrawn and purchases of discharges by soldiers under section 4, act of Congress approved June 16, 1890; from sales to officers and surveying expeditions authorized by law	132, 981. 41
Total.....	1, 521, 082. 53
The remittances to officers of the Quartermaster's Department at the general depots and to the Fort Leavenworth military prison and elsewhere, for the purchase and manufacture of clothing and equipage and other incidental expenses connected therewith, amounted to...	1, 251, 458. 68
Leaving a balance of.....	269, 623. 85

in the Treasury of the United States on the 30th of June last, nearly all of which, together with remaining credits from collections by the Pay Department, and the sum of \$11,899.17, due on account of issues to the militia, will be needed to pay obligations under contracts entered into prior to the expiration of the last fiscal year.

The amounts remitted to officers on account of clothing and equipage were distributed as follows:

Depot at Philadelphia, Pa	\$958, 385. 58
Depot at Jeffersonville, Ind	139, 927. 93
Depot at St. Louis, Mo.....	5, 808. 72
Depot at San Francisco, Cal	136, 930. 25
Military prison at Fort Leavenworth, Kans.....	8, 262. 49
To various departments and posts.....	2, 143. 71
Total	1, 251, 458. 68

PURCHASES.

There were purchased at the general depots and at the Fort Leavenworth military prison, during the last fiscal year, the following principal articles of clothing and equipage, viz:

Helmets, untrimmed.....	13, 473	Mosquito bars.....	4, 281
Helmets, cork.....	10, 134	Axes	2, 300
Campaign hats	28, 948	Shovels	2, 500
Forage caps.....	53, 288	Scrubbing brushes	13, 000
Fur caps	11, 039	Cloth, dark blue, Army standard, yards	2, 124
Fur gauntlets, pairs	14, 500	Cloth, dark blue, finer quality, yards	2, 966
Leggings, pairs.....	39, 483	Kersey, sky blue, Army standard, yards	140, 950
Undershirts, all kinds	107, 782	Kersey, sky blue, finer quality, yards	8, 566
Muslin shirts.....	35, 539	Blouse flannel, Army standard, yards	104, 548
Drawers, knit, wool, pairs	15, 003	Blouse flannel, finer quality, yards	10, 211
Wool stockings, pairs	120, 437	Shirting flannel, yards	31, 273
Cotton stockings, pairs.....	138, 508	Blouse-lining flannel, yards	109, 848
Berlin gloves, pairs	155, 549	Canton flannel, yards	184, 065
Woolen mittens, pairs	3, 000	Cotton duck, yards.....	181, 391
Leather gauntlets, pairs.....	17, 999	Cotton duck, for fatigue clothing, yards.....	51, 026
Boots, pairs.....	1, 213	Leather, counter, pounds.....	2, 093
Shoes, calfskin, pairs	49, 014	Leather, sole, pounds	84, 003
Shoes, barrack, pairs	42, 306	Leather, welt, pounds.....	8, 250
Arctic overshoes, pairs.....	5, 999	Leather, wax upper, square feet.	30, 005
Blankets, wool.....	37, 753	Leather, calfskin, pounds.....	33, 752
Mattresses	3, 000	Capes, rubber.....	300
Pillows	4, 000		
Pillowcases	29, 062		
Iron bedsteads, with woven-wire bunk bottoms	1, 000		
Barrack chairs	5, 799		
Brooms, corn	4, 500		
Woven-wire bunk bottoms.....	4, 770		

MANUFACTURES AT GENERAL DEPOTS.

The manufactures of clothing and equipage at the general depots during the last fiscal year from materials purchased by this department were as follows:

Articles.	Depots.		
	Philadel- phia.	Jefferson- ville.	San Fran- cisco.
Dress coats, all kinds.....	3,967	.....	1,173
Overcoats, kersey, made and unmade.....	9,908	.....	922
Blouses, made and unmade.....	26,678	20,000	6,766
Coats, canvas fatigue.....	1,608	2,500	3,073
Trousers, kersey, foot, made and unmade.....	51,006	.....	7,460
Trousers, kersey, mounted, made and unmade.....	12,485	.....	2,862
Trousers, canvas fatigue.....	2,677	6,000	2,525
Overalls.....	1,141	.....	1,023
Stable frocks.....	1,620	.....	14
Shirts, dark-blue flannel.....	6,216	6,000	4,763
Drawers.....	15,084	42,128	8,489
Tents, conical wall.....	272	.....	.....
Tents, hospital.....	74	.....	.....
Tents, wall.....	725	.....	.....
Tents, shelter.....	1,309	.....	.....

TRANSACTIONS WITH THE FORT LEAVENWORTH MILITARY PRISON

The following are the articles of clothing and equipage that were manufactured for this department at the Fort Leavenworth military prison during the last fiscal year, and cost of same, viz:

Articles.	Number.	Material.	Prison labor.	Civilian labor.	Royalty.	Total.
Boots, machine-sewed, pairs.....	300	\$858.38	\$32.25	\$34.67	.....	\$925.30
Campaign shoes, machine-sewed, pairs.....	2,694	4,187.64	535.25	63.82	\$74.42	4,861.13
Calfskin shoes, hand-sewed, pairs.....	20,079	82,000.30	5,521.57	821.51	85.21	88,378.59
Corn brooms.....	26,000	3,357.17	649.75	.....	.....	4,006.92
<i>Clothing for prisoners at Alcatraz Island.</i>						
Overalls, pairs.....	10	3.64	1.00	.....	.....	4.64
Trousers, pairs.....	425	482.48	212.50	.....	.....	694.98
Shirts.....	350	385.26	35.00	.....	.....	420.26
Blouses.....	20	83.15	10.00	.....	.....	43.15
Total.....	.....	41,307.42	6,997.32	920.00	109.68	49,334.87

There were sold during the fiscal year at the Fort Leavenworth military prison scrap leather and condemned tools, for which the sum of \$17.58 was realized. The amount was placed on the books of the Treasury to the credit of "Miscellaneous receipts."

There were turned over by this department to the prison authorities, for issue to the convicts and use at the prison, the following articles as a partial offset for the labor performed for the Quartermaster's Department, viz:

Clothing and equipage.

264 pairs campaign shoes, at \$1.85.....	\$488.40
5,217 pairs brass-screwed shoes, at \$1.79.....	9,338.43
316 pairs calfskin shoes, at \$1.98.....	625.68
1,260 corn brooms, at 17 cents.....	214.20
131 overcoats, light shade, at \$10.36.....	1,357.16
100 wool blankets, at \$4.08.....	408.00
	<hr/> \$12,431.87

Other stores.

4 single sets harness, ambulance, wheel, at \$16.50.....	\$66.00	
3 single sets harness, express, at \$22.70	68.10	
2 single sets harness, ambulance, lead, at \$14.50.....	29.00	
15 ambulance collars, at \$1.59.....	23.85	
1 letters-received book.....	8.80	
1 index book.....	1.63	
1 set tags (alphabet) .....	.50	
		\$197.88
Total		12,629.75

The money value of the prison labor performed for the Quartermaster's Department during the fiscal year is reported to have been \$26,321.53.

ISSUES TO THE MILITIA.

The value of clothing, equipage, and supplies issued to the militia under the act of July 1, 1887, amending section 1661, Revised Statutes, and for which the appropriations of the Quartermaster's Department have been or will ultimately be reimbursed, was as follows:

States and Territories.	Clothing and equipage.	Regular supplies.	Army transportation.
Alabama.....	\$5,832.08		
Arizona.....	2,211.56		
Arkansas.....	4,096.16		
California.....	2,123.93		
Colorado.....	8,124.79	\$51.30	
Connecticut.....	5,136.47		
District of Columbia.....	3,746.73		
Florida.....	759.81		
Georgia.....	2,259.12		
Illinois.....	6,074.89		
Indiana.....	3,259.61		
Iowa.....	7,808.82		
Kansas.....	7,171.80		
Kentucky.....	6,521.88		
Maine.....	332.25		
Maryland.....	5,823.99		
Michigan.....	10,896.33		
Minnesota.....	1,094.62		
Mississippi.....	9,026.27		
Missouri.....	11,319.81		
Montana.....	1,680.87		
Nebraska.....	11,713.95		
New Jersey.....	1,018.97		\$4.42
New Mexico.....	5,261.05	1.35	
New York.....	2,006.96		
North Carolina.....	8,093.96		
North Dakota.....	3,059.74		
Ohio.....	10,143.42		
Pennsylvania.....	7,879.50		
Rhode Island.....	1,209.26		
South Carolina.....	5,399.15		
South Dakota.....	3,266.65		
Tennessee.....	8,487.65		
Texas.....	6,241.64		
Utah.....	5,525.67		
Vermont.....	2,874.17		
Virginia.....	6,885.03		
West Virginia.....	1,595.44		
Wisconsin.....	1,018.92		
Wyoming.....	3,018.77		
Total.....	200,000.29	52.65	4.42

The following issues have also been made during the last fiscal year to the commanding general District of Columbia militia under the act

of Congress approved March 1, 1889, for the value of which the Quartermaster's Department will not be reimbursed, viz:

Clothing and equipage	\$1, 813. 06
Forage and straw	716. 75
Total	<u>2, 529. 81</u>

ISSUES TO INDIAN PRISONERS OF WAR.

The value of the articles of clothing, equipage, and materials issued to Indian prisoners of war and their families, who are kept under surveillance at Mount Vernon barracks, Ala., amounted to the total sum of \$5,225.30. Of this amount \$694.65 is on account of supplies from the Army and \$4,530.65 on account of goods specially purchased for the purpose.

SALES OF CONDEMNED AND OBSOLETE CLOTHING AND EQUIPAGE.

There were sold during the last fiscal year at the general depots of the Quartermaster's Department and at the Fort Leavenworth military prison, condemned and obsolete articles of clothing, equipage, and materials, realizing a total of \$31,005.78. The expenses connected with the sales were \$221.30. The net proceeds of said sales were covered into the Treasury and credited to "miscellaneous receipts," as required by law.

COLLECTIONS BY PAY DEPARTMENT.

There were collected by the Pay Department, to be credited to the appropriation for clothing and equipage for the last fiscal year, on account of clothing overdrawn by the enlisted men, \$66,813.79, and on account of purchases of discharges by soldiers under section 4, act of Congress approved June 16, 1890, \$39,579.88.

SALES TO UNITED STATES SOLDIERS' HOME.

The following sales of clothing and equipage were made to the United States Soldiers' Home, near Washington, D. C., for use of the inmates of said home, during the fiscal year, at the regulation prices for cash, viz:

1893.	
Sept. 2.	700 mattress covers, at \$0. 41..... \$287. 00
<i>Obsolete trousers.</i>	
	133 pairs foot, heavy, old sizes, at \$2..... 266. 00
	597 pairs mounted, heavy, old sizes, at \$2.50..... 1, 492. 50
	70 pairs mounted, heavy, new sizes, at \$3.43..... 240. 10
Oct. 17.	1 post flag..... 9. 24
Nov. 15.	1 overcoat, mounted..... 12. 20
Total.....	<u>2, 307. 04</u>

SALES TO GEOLOGICAL SURVEY.

There were sold to the Director of the U. S. Geological Survey during the last fiscal year for use of surveying expeditions 5 hospital tents and flies, 2 sets poles, 17 wall tents and 19 flies, 12 sets of poles, 1 com-

plete common tent, 2 sets hospital and 10 sets wall tent pins, and 34 iron tent pins, at a total value of \$518.77, for which the appropriation for clothing and equipage has been reimbursed.

BOOTS.

During the last fiscal year various samples of boots, differing in pattern, weight, and quality from the present standard, were procured by this Department for examination.

A selection was made of the sample deemed most suitable for the cavalry service, and 100 pairs, conforming to such sample, were manufactured and sent out for trial to various posts. The vamps of these boots were made of calfskin, of the same weight as that used for the shoes, and were side-lined.

It would seem from reports received that the boots sent out for trial have given general satisfaction. Further action will be taken when the supply of the present pattern on hand is exhausted.

SHOES.

The issue of the calfskin shoes was commenced during the last fiscal year. Thus far it has been necessary, in the interest of economy, to limit the issue to such sizes and widths as can not be supplied from the stock of wax upper campaign shoes on hand; it being the endeavor of this office to exhaust the available supply of the latter kind at posts and depots before furnishing the others.

RUBBER CAPES.

A number of rubber capes intended as a substitute for the rubber ponchos and blankets heretofore supplied to the enlisted men of the Army were procured during the last fiscal year. Fifty of the capes were sent out for trial to various posts and reports called for as to their adaptability. From the reports thus far received it would seem that opinions differ somewhat as to the merit of the capes.

ALUMINIUM EQUIPMENTS.

The subject of substituting helmet and cap ornaments and buttons made of aluminium in lieu of brass has had consideration. No conclusion has yet been reached, but the matter of reducing the weight of such articles, if consistent with their durability, is of sufficient importance to warrant continued investigation.

CONCLUSION.

For further and detailed information regarding the articles of clothing, equipage, and materials on hand at the general depots of the Quartermaster's Department on the 30th of June, 1893, and the quantities purchased, manufactured, received from depots and posts, taken up, sold, transferred to general depots, expended, issued to the Army and the militia during the last fiscal year, and the quantities remaining available on the 30th of June, 1894, I beg to refer to the consolidated statement accompanying this report.

Very respectfully,

M. I. LUDINGTON,

Deputy Quartermaster-General, U. S. Army.

The QUARTERMASTER-GENERAL, U. S. ARMY.

A.—Statement showing articles of clothing and equipage and material on hand at the issuing depots of the Quartermaster's Department June 30, 1893, the quantities purchased, manufactured, received from posts and depots, taken up, sold, transferred to general depots, expended, issued to the Army and the militia, and the quantities remaining in depots June 30, 1894.

Articles.	On hand June 30, 1893.	Pur- chased.	Manu- fac- tured.	Received from gen- eral de- pots.	Received from posts.	Gained.	Total received.	Sold.	Trans- ferred to general depots.	Expend- ed or dropped.	Issued to the militia.	Issued to the Army.	Total issued.	Remain- ing on hand June 30, 1894.
Aiguillettes and shoulder knots..sets..	1,021			5	59		1,085	51	5	1	30	172	259	826
Blankets, woolen	11,668	37,753		12,701	356	55	62,533	94	12,801		1,438	10,890	25,223	37,310
Blouses:														
Made, Army standard	16,341		32,880	6,162	879	3,145	59,407	685	6,175	1	10,156	11,916	28,933	30,474
Unmade, Army standard	6,270		15,479	8,783	224		30,756	405	7,870	142	1,116	14,381	23,914	6,842
Made, fine quality	754		1,353		60		2,167				170	693	863	1,304
Unmade, fine quality	87		3,732		43	383	4,245				96	3,983	4,079	1,166
Blouse trimmings.....			908				908	5			903		908	
Boots:														
Brass-screwed.....pairs..	9,163				129		9,292	9,216		10		1	9,227	65
Sewed.....do..	14,090	1,213	400	1,730	1,461		18,894	65	1,743	11		3,422	5,241	13,658
Brassards.....	112		1,831		20	65	2,028	9			35	1,452	1,496	532
Capes, rubber.....		300					300			1		51	52	248
Caps:														
Canvas	7,060		9		580	2	7,651	36		4		1,323	1,363	6,288
Forage	38,314	53,288		26,032	745	4	118,383	557	26,032	12	10,555	23,882	61,038	57,345
Fur.....	8,177	11,039		5,891	36		25,143	14	5,991			6,200	12,105	13,038
Cap ornaments:														
Bugles.....	32,534				158	200	32,892	21			191	153	365	32,527
Castles	981					2	983				100	408	508	475
Crescents.....	2,478				7		2,485	16				32	48	2,437
Crossed arrows	500				14		514			3		143	146	368
cannon	6,130	2,000		900	29		9,263	7	900		881	2,048	3,836	5,427
flags and torch						467	467					80	80	387
pen and key						628	628					64	64	564
rifles	18,767	14,935		5,000	186		38,888	0	5,000		13,742	6,096	25,444	13,444
sabers.....	10,974	10,000		4,100	1,030	25	26,129		4,100		674	3,254	8,028	18,101
Geneva crosses		1,008				345	1,353		75		5	736	816	537
Letters	137,460	300		8,000	4,313	169	150,242	136	8,000		10,158	12,916	37,210	113,092
Lyres.....	3,800				44		3,844				146	267	413	3,431
Numbers	157,641	10,000		9,000	3,368	281	180,290	243	9,000		13,265	14,766	37,274	143,016
Shell and flames	1,802			150		4	1,956	8	150			125	283	1,673
Wreaths.....	2,135				141		2,276	1	100	8		343	448	1,828
Chevrons:														
Gold lace	6,062		2,470	168	516		9,222	555	168		356	2,585	3,564	5,658
Cloth	8,414		17,601	8,000	441		34,456	1,403	8,000	11	3,511	9,788	22,703	11,753
Coats:														
Canvas fatigue	25,141		7,145	4,050	290		36,626	41	4,050	2,003		7,642	13,736	22,890
Summer sack	4,957		5,361		1,996		12,314	13		469		4,901	5,883	6,981

Uniform dress--	1,765	113	36	35	74	35	19	139	260	1,000
Musicians, made.....										
unmade.....										
Noncommissioned officers', made.....	260	70		31				62	62	305
Noncommissioned officers', unmade.....		2		79				4	81	
Privates', made.....	6,470	4,850	2,287	285	501	2,297	921	3,431	7,262	7,841
unmade.....	2,592	96	134	878	182			269	1,022	2,730
Coat facings.....	7,976	849	416	1,545	1,393	461		507	2,361	8,425
collar devices, hospital corps sets.....	176		2	28				65	65	141
Collars, linen.....	104,664	25,002	67,188	747	261	67,188	144	79,818	147,411	140,209
Drawers:										
Canton flannel.....pairs.....	36,898	65,646	40,000	646	114	40,000		55,960	98,441	44,749
Knit wool.....do.....	10,612	15,003			8			8,352	16,614	9,001
Frock, stable.....	8,574	1,634	2,800	243	21	2,050	250	2,705	5,026	8,225
Gauntlets:										
Fur.....pairs.....	5,917	14,500	9,520	120	8	9,520	1	11,149	20,678	9,379
Leather.....do.....	8,022	17,999	8,024	59	442	8,024	2	10,110	18,846	15,258
Gloves, Berlin.....do.....	185,161	155,549	172,483	703	104	172,477	18	175,908	357,437	158,527
Hats:										
Campaign.....	27,565	28,948	23,027	215	53	23,027		18,875	45,207	34,557
cords and tassels for.....	26,987			458	142			788	930	25,629
Helmets:										
Cork.....	17,596	10,134	5,035	236	201	5,035	1,105	5,082	11,423	21,581
Untrimmed.....	15,206	13,473	6,200	121	69	6,250	1,206	6,040	13,565	21,438
Cords and bands for.....	6,595		1,023	127	205	1,023	150	1,348	2,787	4,980
Eagles for.....	12,239	8,500	5,500	63	45	5,500	1,206	5,269	12,020	1,442
Eagle devices for.....	5,208		150	141	230	75		317	2,062	3,570
Hair plumes for.....	7,366		1,125	171	88	1,125	150	1,325	2,688	5,999
Numbers for.....	131,335		7,000	1,120	150	7,000	849	7,193	15,192	124,386
Plume sockets for.....	6,897		1,900	72	39	1,900	150	1,187	3,276	5,639
Scrolls and rings for.....	14,405		4,000		8	4,000	240	2,650	6,898	11,618
Side buttons for.....	37,357	16,402	7,915	138	28	8,430	1,411	11,342	21,211	41,693
Spikes for.....	6,583	8,000	3,100	47	33	3,100	1,101	4,144	8,378	9,352
Straps, chin, for.....		20						45	45	
Top bases for.....	8,455	8,000	5,000	10	27	5,000	1,209	5,307	11,543	10,029
Leggings, canvas.....pairs.....	16,953	39,483	16,500	228	156	16,500	10,820	13,709	41,185	31,985
Mittens:										
Canvas.....do.....	7,148	406	600	620	4	600		962	1,570	7,204
Woolen.....do.....	11,184			778	667			1,681	2,348	12,625
Music pouches.....	216	350		23	4		1	179	184	405
Neckties.....	7,356	30,000	200	48	21	200		5,138	5,368	32,230
Overalls:										
Engineers'.....pairs.....	593									593
Mounted.....do.....	17,554		1,600	3,482	3	1,000	170	2,458	4,231	20,569
Overcoats:										
Buffalo.....	1,928			25	7			72	96	1,858
Canvas (blanket-lined).....	3,954	8		15	5			381	642	3,335
Kersey, made.....	14,188	10,393	2,599	683	106	2,602	785	5,443	8,936	18,927
unmade.....	1,368	437	250	431	33	250	149	562	994	1,492
Cape linings.....	750	541		37	750			578	1,328	10

A.—Statement showing articles of clothing and equipage and material on hand at the issuing depots of the Quartermaster's Department, etc.—Continued.

Articles.	On hand June 30, 1893.	Pur- chased.	Manu- fac- tured.	Received from gen- eral de- pots.	Received from posts.	Gained.	Total received.	Sold.	Trans- ferred to general depots.	Expend- ed or dropped.	Issued to the militia.	Issued to the Army.	Total issued.	Remain- ing on hand June 30, 1894.
Overcoats—Continued.														
Rubber						4	4							4
Overshoes, article	9,191	5,939		5,700	248	1	21,139	83	5,700			5,573	11,356	9,783
Ponchos, rubber	220	2,993			19	2	3,234	92			546	2,342	2,980	254
Shirts:														
Flannel, dark blue, made	47,939		16,941	12,800	853		78,533	70	12,800		100	20,379	33,349	45,184
unmade	274		38		276		588	1		322		10	333	255
Muslin	4,098	35,539		30	25		39,692	66	30			36,843	36,939	2,753
Shirt studs, bone	1,000	37,728			1,076		39,804					23,328	23,328	16,476
Shoes:														
Barrack	15,235	42,306		16,127	35	3	73,706	22	16,127			19,869	36,018	37,688
Brass-screwed	14,192				562	2	14,756	9,245	5,300	19		33	14,597	159
Calfskin, hand-sewed	39,758	49,014	20,079	56,706	53		165,610	23	57,130	45		23,960	81,158	84,452
Campaign, sewed	22,109		2,694	886	831		26,520	978	220	3	250	15,239	16,690	9,830
Field	1,819				48		1,867	362					362	1,505
Post	441				25		466	437		4			441	25
Stockings:														
Cotton	186,309	138,508		104,200	497		429,514	450	104,200	2,016		164,561	271,227	158,287
Woolen	77,079	120,437		59,000	492		257,008	65	59,000			80,918	139,983	127,025
Suspenders	37,943			8,600	288		45,931	65	8,600			8,348	17,013	28,918
Trousers:														
Canvas fatigue	9,758		12,202	7,750	240		39,950	36	7,750	1,779	84	11,176	20,825	19,125
Foot, made, Army standard	18,957		35,431	16,327	810	1,499	73,024	980	16,325		8,307	19,775	45,387	27,637
unmade, Army standard,														
pairs	3,940		18,029	12,059	201	386	34,615	171	10,500	97	1,015	13,309	25,092	9,523
made, fine quality	1,063		1,125		10		2,198				161	1,254	1,415	783
unmade, fine quality	404		3,881	13	49		4,347		25	37	96	3,767	3,925	422
Hospital corps made	522		1,059		39		1,620	2				724	726	894
unmade	102		739	5	20		866	1		15		716	732	134
Mounted, made, Army standard,														
pairs	14,392		7,210	3,520	732	3,689	29,543	1,676	3,060		628	4,306	9,670	19,873
unmade, Army standard,														
pairs	5,314		7,000	7,844	575	1,079	21,812	384	5,400	129	35	6,099	12,047	9,765
made, fine quality pairs	765		268		6		1,039				63	188	251	788
unmade, fine quality,														
pairs	156		889	9	66		1,120	2	9	84		785	880	240
Linen	380						380	98				71	169	211
Summer	3,222		7,794		2,499	612	14,127	179			60	9,271	9,510	4,617
Trousers stripes:														
Corporals	2,086		16,031	10,275	204		28,596	732	10,374		1,859	10,642	23,607	4,989
Hospital corps	10		1,359		2	2	1,373	2				1,164	1,166	207
N. C. S.	232		686	250	6		1,174	3	150		13	729	804	280

Hergeants'	1,396		9,490	5,800	302		17,048	256	5,985	1,428	6,617	14,286	2,763
Trousers trimmings			1,430				1,430	27				1,430	
Undershirts:													
Cotton, white	5,886	73,003			44		78,833	17			50,308	50,825	28,608
Wool, knit	78,222	34,779		21,000	987	28	135,016	138		5,781	32,460	59,374	75,642
Axes	4,228	2,300		2,300	6	12	8,846	7	2,301	2	2,453	4,923	3,924
Ax helves	10,004	5,600		2,500	5	25	18,035	101	2,501	3	6,802	9,596	8,439
alings	1,003				66	11	1,080	1			9	13	1,067
Bags, barrack	2,704		3,189	1,170	131		7,194	46	840	4	2,476	3,366	3,828
Bed sacks	1,688		1,420		154	175	3,437				673	2,764	2,764
sheets	40,841			19,000	394		60,235	121	19,000	2	16,689	35,812	24,428
Bedsteads, with woven-wire bunk bot-													
toms	1,237	1,000		403	28	25	2,693	50	400		825	800	1,893
Books:													
Company, letters received	196	200		30	2	2	430		30	3	64	177	253
index	211	200		34	3	4	452		34	1	69	184	268
sent	188	200		91	4	2	485		91	1	120	293	192
index	192	200		109	3	3	507		109		98	289	218
order	314	200		130	2		646	130		1	194	406	240
Post council of administration	217	100		10			827		10		12	23	304
letters received	87	100		70			257		70		83	159	98
index	107	100		68		2	277		68		77	151	126
sent	145	100		59	3	7	314		59		47	110	204
index	156	100		42	1		299		42	8	50	99	200
order	327	100		15	10	10	462		15		33	52	410
Regimental letters received	49	50		10	1	1	111		10		12	29	82
index	50	50		10			110		10	2	11	34	76
sent	55	50		15	2	5	127		15		17	40	87
index	61	50		15		1	127		15		14	36	91
order	70	50		15	5		140	3	15	1	16	47	93
Brooms, corn	3,344	4,500	26,000	25,000	180	188	59,212	38	24,216	237	28,886	53,377	5,835
Brushes, scrubbing	5,204	13,000		8,100	50	108	26,462	15	8,100	38	11,557	19,710	6,752
Bugles	43	5					48	6		8	14	26	22
Bunks:													
Iron	2,159				657	5	2,821	36			1,054	1,080	1,731
Card holders for	4,545			1,500		28	6,073	53	1,500		1,733	3,286	2,787
Woven-wire bottoms for	688	4,770		3,164	125		8,747	192	3,114	10	2,391	5,927	2,820
Chairs, barrack	203	5,799		1		16	6,019	6			5,795	5,801	218
Colors:													
Belts and slings	68				3		71	4			2	16	55
Camp	39	250		55		1	345		55	1	69	130	215
Cords and tassels	1						1	1				1	
National	7	13					20				4	14	6
Regimental	4	5					9				3	5	4
Staffs	71			51		21	175		1		32	48	127
Color and guidon cases	4					11	15	2	2		11	15	
Drums	156	150		30	1		337	23	30		45	11	196
Drum cases	104		4		4	7	119	5		4	16	67	52
cords	5						35	1			13	14	21
heads, batter	464	382		25	29	8	858	211	25		310	556	302
snare	1,710	394		75	25	87	2,291	1,693	75		217	1,988	303
knee rests	10			10			10						10

A.—Statement showing articles of clothing and material on hand at the issuing depots of the Quartermaster's Department, etc.—Continued.

Articles.	On hand June 30, 1893.	Pur- chased.	Manu- fac- tured.	Received from gen- eral de- pots.	Received from posts.	Gained.	Total received.	Sold.	Trans- ferred to general depots.	Expend- ed or dropped.	Issued to the militia.	Issued to the Army.	Total issued.	Remain- ing on hand June 30, 1894.
Drum rods	249	24				2	275					68	68	207
slings	760			10	2		772	14		1	43	34	102	670
snafes	2,685					49	2,734	10			1	19	30	2,704
sticks	3,459				1		3,460	13		6	48	52	119	3,341
stick carriages	2,441				9		2,450	19			87	8	64	2,366
Fifes	1,893				4	3	1,900	476		3	37	33	549	1,351
Flags:														
Garrison	59	50				4	113	1		9	8	14	32	81
Hospital field	35	20		1	1	1	58		1		7	10	18	40
general	3	3				1	17				2	1	3	14
Post	238	250		23	1	4	516	12	25	25	16	139	217	299
Storm and recruiting	464	500		3	25		992	39	3	38	16	261	357	635
Flag halliards:														
Garrison and post	411	2		27	2	9	451	40	27	2	11	75	155	296
Storm and recruiting	2,064			50	18		2,132	300	50	2		27	379	1,753
Flag-halliard devices	1,168						1,168	14		700		2	716	452
Guidons:														
Ambulance	14	33			5		52				13	20	33	19
Artillery and cavalry	24	61			2		87			0	4	54	67	20
Indian scouts	3						3							8
Guidon staffs	37						37							1
Hatchets	11,304			900	76	8	12,288	5	900	4	4	28	36	10,060
Hatchet helves	8,820	1,387		2,500	8	223	12,938	104	2,500	7	87	2,953	5,651	7,287
slings	944				23		966				6	14	20	947
Kettles, camp	3,419			600	42	6	4,067	5	600	28	311	596	1,540	2,527
Litters, hand	43					3	46				9	21	30	16
Mattresses	2,477	3,000		1,775	287		7,539	46	1,775		25	2,280	4,126	3,413
covers for	8,152	10,519		4,500	266		23,440	717	4,500			6,007	11,224	12,223
Mess pans	47,140				60	26	47,226	20				463	878	46,348
Mosquito bars	3,681	4,281		5,100	537	307	13,906	152	5,000			5,287	10,439	3,467
head nets	138	1,448			53		1,639	6				1,554	1,560	79
Pickaxes	4,582	200		100	94	16	4,992	11	100		10	802	923	4,069
helves	3,947	505		400	520		5,372		400	1	10	1,567	1,978	3,394
slings	196				11		207					17	17	190
Pillows	3,818	4,000		4,620	164	3	12,605	23	4,620			4,529	9,171	3,434
Pillow cases	13,436	29,062		20,500	342		63,340	92	20,500			28,026	46,618	16,722
sacks	2,679		4		80	183	2,946	282		9		36	327	2,619
Pots, iron	3,909					2	3,911					42	42	3,869
Shovels	3,393	2,500		2,300	4	25	8,223	102	2,300		7	1,974	4,383	3,839
handles	53						53							53
Spades	12,078	200			73	10	12,361	683			5	368	1,056	11,305
helves	29						29							29

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REPORT OF MAJ. D. D. WHEELER, QUARTERMASTER, U. S. ARMY.

WAR DEPARTMENT,
QUARTERMASTER-GENERAL'S OFFICE,
Washington, D. C., August 15, 1894.

GENERAL: I have the honor to submit herewith the following report of the operations of the transportation and regular supplies branches of the office during the fiscal year ending June 30, 1894:

TRANSPORTATION BRANCH.

Through this branch the Quartermaster-General supervises and controls the transportation service of the Army, by rail, water, wagon, and stage; frames regulations and issues instructions to govern same; settles transportation and telegraph accounts which for any reasons, legal or technical, can not be paid by disbursing quartermasters, including the voluminous accounts of the bond-aided Pacific railroads; prepares estimates of funds to provide the Army with transportation, and superintends their economical expenditure.

The expenditures from transportation appropriation for the fiscal year ending June 30, 1894, so far as shown by accounts received to July 1, 1894, of disbursing quartermasters (see report of accounts branch), accounts of the bonded Pacific railroads, service over their non bonded lines, and other transportation accounts settled through the transportation branch, was \$1,939,411.07.

The following statement shows that during the fiscal year 1894 transportation was furnished for 383,664 persons, 3,708 animals, and 89,855 tons of material.

	Railroad.	Water.	Wagon.	Stage.	Govern- ment ves- sels.	Total.
Passengers:						
Officers	1, 053	99	.....	10	21, 893	23, 055
Men	21, 649	2, 408	135	1, 106	335, 311	360, 609
Total	22, 702	2, 507	135	1, 116	357, 204	383, 664
Animals:						
Horses	2, 467	154	.....	1	69	2, 691
Mules	970	41	.....	.....	.....	1, 017
Total	3, 443	195	.....	1	69	3, 708
Stores, pounds:						
Subsistence	23, 426, 434	2, 610, 391	16, 208, 257	798	2, 672, 318	44, 918, 198
Quartermaster	27, 856, 834	1, 389, 606	32, 559, 935	15, 068	2, 827, 446	64, 648, 889
Ordnance	13, 234, 807	5, 378, 329	4, 740, 246	1, 243	2, 447, 563	25, 802, 188
Medical	927, 236	73, 689	1, 171, 770	199	44, 018	2, 216, 912
Signal Service	469, 328	154, 792	204, 693	.....	60	828, 873
Miscellaneous	12, 558, 849	4, 953, 407	18, 866, 015	9, 036	4, 907, 988	41, 295, 295
Total	78, 473, 488	14, 560, 214	73, 750, 916	26, 344	12, 899, 393	179, 710, 355

MOVEMENTS OF TROOPS.

The principal movements of troops during the year, with cost of same, exclusive of deductions on account of land-grant and bond-aided railroads, have been as follows:

Troops.	Movements.	Cost.
3d Artillery.....	Six batteries changing station in Department of the East.....	\$7,405.11
5th Artillery.....	Two troops interchanging stations between Departments of California and the Columbia.	2,041.16
3d Cavalry.....	One troop changing station in Department of the Missouri.....	1,209.12
4th Cavalry.....	Three troops changing station in Department of California.....	1,170.85
5th Cavalry.....	Headquarters and band and two troops changing station in Department of Texas.	130.19
7th Cavalry.....	Three troops changing station in Department of Texas.....	3,030.91
9th Cavalry.....	Two troops interchanging stations between Departments of the Platte and Colorado.	2,760.78
5th Infantry.....	Four companies changing station in Department of the East.....	3,295.53
9th Infantry.....	Three companies changing station in Department of the East.....	862.60
Do.....	One company (Indian) from Department of the East to Department of the Colorado.	2,482.58
11th Infantry...	Four companies changing station in Department of the Colorado.....	1,765.38
13th Infantry...	One company changing station in Department of the Missouri.....	152.30
18th Infantry...	Headquarters and band and eight companies changing station in Department of Texas.	6,848.36
20th Infantry...	Two companies changing station in Department of Dakota.....	878.06
21st Infantry...	One company from Department of the Platte to Department of the East.	4,884.26
23d Infantry.....	Headquarters and band and eight companies changing station in Department of Texas.	3,838.62
25th Infantry...	One company changing station in Department of Dakota.....	2,334.38
Headquarters Department of the Colo- rado.	Changing station from Los Angeles, Cal., to Denver, Colo.....	3,829.72
Various.....	Two batteries Third Artillery and one company Ninth Infantry changed from Fort Barrancas, Fla., to Fort McPherson, Ga., on account of proximity of yellow fever.	1,294.03
Do.....	Eight troops Third Cavalry and four companies Thirteenth Infantry transported between various points in Department of the Missouri to protect settlers.	5,050.42
Do.....	Transportation of detachment of companies A, Tenth Infantry, E, Twelfth Infantry, H, Fourteenth Infantry, from Fort Leavenworth, Kans., to various points in Indian Territory.	2,178.50
Do.....	Memorial Day, May 30, Battery E, First Artillery, and Fifteenth Infantry, from Fort Sheridan to Chicago, Ill., and return.	341.09
Do.....	Memorial Day, band and two batteries, Third Artillery, from Fort McPherson to Marietta, Ga., and return.	102.05
Do.....	Memorial Day, troops from New York Harbor to New York City and Brooklyn, and return.	63.15
Do.....	Columbian Exposition, officers and cadets from West Point, N. Y., to Chicago, Ill., and return.	10,826.85
Do.....	Columbian Exposition, two companies Third Infantry from Fort Snelling, Minn., to Chicago, Ill., and return.	1,840.08
Do.....	Movements of Seventeenth Infantry in Department of the Platte on account of Commonweal army.	2,735.20
Total amount expended in the principal movements of troops during the year.		73,360.27

SUMMER ENCAMPMENTS AND RIFLE COMPETITION.

From reports received it is shown that there was expended during the fiscal year 1894 in transportation of troops in connection with summer encampments, practice marches, field maneuvers, and instructions, the sum of \$12,571.79; also for the transportation of enlisted men to engage in target practice and rifle competition, \$25,740.52.

Where expended.	Summer camps.	Rifle competition.
Department of the East.....	\$510.65	\$9,943.20
Department of the Missouri.....	3,076.30	2,832.38
Department of the Platte.....		4,624.46
Department of Texas.....	76.00	1,314.14
Department of Dakota.....	4,755.54	2,514.40
Department of the Colorado.....	181.50	3,134.74
Department of California.....	1,282.30	
Department of the Columbia.....	2,689.50	1,377.20
Total.....	12,571.79	25,740.52

BOND-AIDED PACIFIC RAILROADS, THEIR LEASED LINES AND BRANCHES.

Five thousand seven hundred and ninety persons, 1,175 animals, and 31,588,968 pounds of freight were transported for the department over the bond-aided Pacific railroads, their branches, and leased lines during the year.

The service performed by each road is shown in the following table:

Company.	Persons transported.	Animals transported.	Freight transported.
Union Pacific	3,562	672	13,140,910
Central Pacific (branches and leased lines operated by the Southern Pacific Company).....	1,820	431	16,213,868
Sioux City and Pacific	408	72	2,234,190
Total.....	5,790	1,175	31,588,968

Fifteen hundred and forty-nine accounts of these railroads, aggregating \$295,851.41, were received at this office during the year for settlement through the Treasury, as required by law. Of this amount \$133,210.89 inured to the Union Pacific, \$161,489.61 to the Central Pacific (branches and leased lines), operated by the Southern Pacific Company, and \$1,150.91 to the Sioux City and Pacific Railroad.

Of these accounts 539, aggregating \$73,483.12, were for transportation performed for other departments of the Government under law of July 5, 1884, and of this amount \$35,715.17 was for service over the Union Pacific, \$37,765.88 over the Central Pacific (branches and leased lines), operated by the Southern Pacific Company, and \$2.07 over the Sioux City and Pacific Railroad.

The following is a statement of the analysis of the accounts of these companies for the year, showing amounts for troops and stores and for bonded and non bonded service, respectively:

Company.	Amount of accounts received in Quartermaster-General's Office.	Estimated amount of accounts not rendered.	Portions inuring for troops.	Portion inuring for stores.	Proportion subsidized.	Portion unsubsidized.	Total amount.
Union Pacific	\$133,210.89	\$28,690.81	\$41,984.10	\$119,917.60	\$149,150.33	\$12,751.87	\$161,901.70
Southern Pacific Company, operating Central Pacific R. R.	161,489.61	77,113.18	30,009.51	208,593.28	94,073.18	144,529.61	238,602.79
Sioux City and Pacific ...	1,150.91	430.14	456.39	1,124.66	1,484.08	96.97	1,581.05
Total.....	295,851.41	106,234.13	72,450.00	329,635.54	244,707.59	157,377.95	402,085.54

VESSELS IN SERVICE OF THE QUARTERMASTER'S DEPARTMENT.

This department has kept in service at points where constant use is required 8 steamboats which it owns. The cost of maintaining these, including repairs, for the year 1894 was \$82,296.47, as follows:

Name.	Class.	Tonnage.	When purchased or built.	Cost or estimated value.
General Meigs	Propeller	175	May 11, 1892	\$64,436.43
Ordnance	do	97	Sept. 1, 1883	27,870.80
Atlantic	Steam tug	60.31	Oct. 15, 1878	13,865.56
Thayer	Steam launch	32.36	Oct. 8, 1874	7,200.00
Hamilton	do	37.68	Feb. 1, 1875	7,800.00
Monroe	do	62.36	Nov. 30, 1875	15,200.00
Resolute	Steam tug	70.30	Nov. 14, 1879	17,947.46
General McDowell	Propeller	160	Nov. 17, 1886	56,150.00

Name.	By whom employed.	Where employed.	Paid for repairs.	Paid for running expenses.	Total expenses.
General Meigs	Depot quartermaster	New York Harbor	\$1,488.26	\$12,938.87	\$14,427.13
Ordnance	do	do	764.84	7,535.85	8,300.69
Atlantic	Post quartermaster.	Governors Island, New York Harbor.	4.80	11,772.68	11,777.48
Thayer	do	do	1,110.41	555.79	1,666.20
Hamilton	do	Dauids Island, New York Harbor.	112.39	4,525.61	4,638.00
Monroe	do	Fort Adams, R. I.	816.51	3,506.05	4,322.56
Resolute	do	Boston, Mass	1,173.80	9,241.77	10,415.57
General McDowell	Chief quartermaster	San Francisco Harbor	4,127.15	22,621.69	26,748.84
Total			9,598.16	72,698.31	82,296.47

STATEMENT OF CHARTERED VESSELS.

The following is a list of vessels temporarily used at times during the year by charter and hire, showing cost of such service to have been \$5,439.77.

Name.	Class.	Tonnage.	Period of service.
Willie C	Steam tug	16.03	July 1, 1893, to June 30, 1894.
E. B. Lane	do	Unknown.	July 1, 1893, to Aug. 31, 1893.
Wesley A. Gove	do	70.68	Aug. 30, 1893, to Sept. 13, 1893.
Anna	do	Unknown.	June 1 to 30, 1894.
Princess Ida	Sloop	10	July, 1893, to June 30, 1894.
Ben Hur	do	Unknown.	Feb. 2, 1894.
Unknown	Unknown	Unknown.	Nov. 15 to 18, 1893.
Rescue	Steam tug	172.23	Aug. 25 to Sept. 13, 1893.
Undine	Naphtha launch		As desired.

Name.	Where and by whom employed.	Rate.	Earnings.	Remarks.
Willie C	Post quartermaster, Fort Barrancas, Fla.	\$300 per month ..	\$3,600.00	Between Pensacola and Forts Barrancas and Pickens.
E. B. Lane	Post quartermaster, Fort Monroe, Va.	\$2.50 per hour ..	153.77	Placing targets.
Wesley A. Gove	Post quartermaster, Boston.	\$13.75 per trip ..	412.50	Replace Resolute, being repaired.
Anna	Post quartermaster, Fort Monroe.	\$3 per trip	82.50	Replace Resolute.
Princess Ida	Fort Adams, R. I.	\$5 per day	104.00	Replace Monroe, undergoing repairs.
Ben Hur	Fort Preble, Me	\$6 per job	6.00	Portland to Fort Gorges.
Unknown	Post quartermaster, Fort Preble, Me.	\$4 per day	11.00	Investigating damage by storm at Anastasia Island.
Rescue	Chief quartermaster, San Francisco,	\$60 per day	1,020.00	While McDowell was being repaired
Undine	San Diego, Cal	\$5 per trip	50.00	Carrying officers to man of war in harbor.
Total			5,439.77	

TELEGRAPHING ON ARMY BUSINESS.

On August 5, 1893, the Postmaster-General announced in department circular a new schedule of rates for official Government telegrams for the fiscal year ending June 30, 1894. It was published to the Army, General Orders, No. 72, Adjutant-General's Office, 1893.

This ended the controversy between the Western Union Telegraph Company and the Government, which had existed during the three prior fiscal years, as to rates for public telegrams, and the consequent protest under which the company accepted payment.

The new schedule of rates has proved satisfactory to the telegraph company, which has transmitted Army telegrams during the year and presented accounts for the service at the rates fixed, which have been promptly paid.

ACCOUNTS AND CLAIMS FOR TRANSPORTATION.

The records show that 3,424 accounts and claims, amounting to \$394,950.54, were received and examined for settlement in this branch during the year.

Of these, 461, amounting to \$57,807.80, were chargeable to the appropriation for army transportation for the several years in which the services were performed; 1,549, amounting to \$295,851.41, were for transportation over the bond-aided Pacific railroads, their leased lines and branches; 1,102, amounting to \$35,096.92, exclusive of 539 accounts of the bond-aided Pacific railroads, amounting to \$73,483.12, were for transportation for other departments and payable by the several departments interested; and 312, amounting to \$6,194.41, were for the transmission of telegrams on official military business, chargeable to the appropriation for incidental expenses.

REGULAR SUPPLIES.

This branch has charge of all matters relating to the procurement and distribution of supplies, including means of transportation, stoves and heating apparatus, and repair and maintenance of same, for heating barracks and quarters; of ranges, stoves, and apparatus for cooking; of fuel and lights for enlisted men, guards, hospitals, storehouses, and offices, and for sales to officers; of equipment of bakehouses to carry on post bakeries; of the necessary furniture, text-books, paper, and equipments for the post schools; for the tableware and mess furniture for kitchens and mess halls for enlisted men; of forage and bedding for the public animals of the Quartermaster's Department, and for the authorized number of officers' horses; of straw for soldiers' bedding; of stationery and blank books for the Quartermaster's Department, certificates for discharged soldiers, blank forms for the Paymaster's and Quartermaster's Departments, and of the necessary correspondence connected with the work of this branch.

This branch has also charge of matters relating to all contracts to which the Quartermaster's Department is a party.

Cavalry and artillery horses purchased (by department or post).

For what department, depot, or post.	Cav- alry.	Arti- lery.	Total cost.	Average cost.	Where purchased.
Department of Dakota	122	.....	\$9, 674. 91	\$79. 30	In department.
Department of the East	26	27	6, 099. 00	115. 07	St. Louis and New York.
Department of California.....	27	12	4, 587. 70	117. 63	In department.
Department of the Missouri...	183	30	23, 583. 70	110. 72	St. Louis, Chicago, and Fort Riley.
Department of Texas.....	170	10	18, 260. 00	101. 44	In department.
Department of the Platte.....	103	.....	8, 600. 50	83. 50	Do.
Department of the Colorado ...	244	.....	24, 303. 70	99. 60	St. Louis and southern Califor- nia.
Department of the Columbia ..	63	.....	7, 469. 00	118. 55	In department.
West Point.....	13	.....	1, 417. 00	109. 00	St. Louis, Mo.
Jefferson barracks.....	6	.....	628. 20	104. 70	Do.
Total	957	79	104, 623. 71	100. 99	

Average cost of cavalry horses..... \$99. 19
Average cost of artillery horses..... 122. 66

Mule and team horses purchased.

For what department, depot, or post.	Horses.			Mules.		
	Num- ber.	Total cost.	Average cost.	Num- ber.	Total cost.	Average cost.
Department of Dakota	2	\$400. 00	\$200. 00	39	\$4, 759. 00	\$122. 02
Department of the East	13	2, 289. 00	176. 07	13	1, 800. 50	138. 50
Department of the Missouri.....	.....	.....	.....	52	6, 176. 00	118. 77
Department of Texas.....	.....	.....	.....	50	6, 250. 00	125. 00
Department of the Platte.....	2	260. 00	130. 00	50	5, 937. 50	118. 75
Department of the Colorado .....	.....	.....	.....	50	5, 937. 50	118. 75
Department of the Columbia .....	.....	.....	.....	18	2, 137. 50	118. 75
West Point	5	600. 00	120. 00	.....	.....	.....
Columbus barracks	4	599. 00	149. 75	4	575. 00	143. 75
Willets Point.....	1	185. 00	.....	.....	.....	.....
Washington depot.....	7	1, 855. 00	265. 00	1	175. 00	.....
Philadelphia depot	2	290. 00	145. 00	.....	.....	.....
St. Louis depot .....	.....	.....	.....	2	274. 00	137. 00
St. Louis clothing depot.....	.....	.....	.....	2	300. 00	150. 00
Total	36	6, 478. 00	179. 94	281	34, 322. 00	122. 14

The following is a statement of the sales of public animals in the different departments and at general and other depots during the fiscal year, as reported to this office, showing the number of each class and the total amount realized :

Where sold.	Cavalry andartil- lery horses.		Draft horses.		Mules.	
	Num- ber.	Amount.	Num- ber.	Amount.	Num- ber.	Amount.
Department of Dakota	98	\$1, 729. 00	1	\$51. 00	42	\$772. 55
Department of the East	13	373. 00	7	146. 40	5	129. 50
Department of California.....	28	428. 50	1	1. 00	1	10. 00
Department of the Missouri.....	160	3, 469. 85	.....	.....	98	2, 684. 37
Department of Texas	73	2, 039. 85	.....	.....	50	1, 181. 20
Department of the Platte	41	580. 00	.....	.....	22	2, 008. 17
Department of the Colorado	128	3, 375. 00	.....	.....	87	2, 417. 40
Department of the Columbia	48	643. 00	.....	.....	24	349. 50
Columbus barracks.....	.....	.....	3	23. 25	2	24. 00
Washington depot.....	19	672. 00	9	369. 00	.....	.....
Philadelphia depot .....	.....	.....	2	64. 80	.....	.....
St. Louis depot	1	43. 00	.....	.....	4	152. 00
West Point .....	.....	.....	1	16. 00	.....	.....
Jefferson barracks.....	5	83. 00	.....	.....	.....	.....
Total	614	13, 436. 20	24	671. 45	435	9, 728. 69

The following is a summary of the number of animals purchased, sold, died, etc., during the fiscal year and remaining on hand at its close, as indicated by reports received at this office :

	Cavalry and artillery horses.	Team horses.	Mules.
On hand July 1, 1893	6,647	293	3,981
Purchased	1,036	36	281
Total to be accounted for	7,683	329	4,262
Sold	614	24	135
Died	140	8	101
Total sold and died	754	32	236
On hand July 1, 1894.....	6,929	297	4,026

WAGONS, CARTS, ETC.

During the fiscal year ended June 30, 1894, there were purchased :

Kind.	Num- ber.	Cost.	Kind.	Num- ber.	Cost.
Bobsleds	3	\$70.00	Trucks:		
Buckboards	3	340.00	Hook and ladder	1	\$300.00
Carts:			Hand	1	10.50
Coal	1	28.00	Wagons:		
Dump	35	1,259.65	Baggage	2	365.00
Feed	1	25.00	Rock	4	552.00
Hand	138	1,842.00	Spring	22	4,719.00
Hose	2	150.00	Sprinkling	4	1,288.75
Sanitary	25	5,250.00	Water	1	837.00
Coal barrows	2	26.00	Wheelbarrows	256	547.68
Sleighs	2	139.00	Total		17,249.53

ILLUMINATING SUPPLIES.

During the fiscal year 1,500 lamps (pendent and bracket), 617 lanterns (assorted), 5 lamp posts, 402 street lamps, 20 lamps (assorted), and the necessary chimneys, wicks, and the various parts required for expenditure and repairs were purchased at general depots at a cost of \$12,975.09. Six hundred and sixty-eight thousand and sixty-eight gallons of mineral oil were purchased at a cost of \$82,633.98. Thirty-two thousand four hundred and eighty-eight gallons of gasoline were purchased at a cost of \$3,885.13. Expenditure for gas and matches, \$7,408.87. The aggregate expenditure on account of said illuminating supplies was \$106,873.07.

The money received from sales of illuminating supplies to officers reverts to the appropriation for regular supplies.

VETERINARY SUPPLIES.

During the fiscal year veterinary supplies were purchased as follows: New York depot, \$3,285.04.

CONTRACTS.

During the fiscal year ending June 30, 1894, 1,384 contracts were received, examined, and filed in this office. Seven hundred and sixty-nine were for 79,179 cords of wood, 220,709,864 pounds of coal, 15,880 bushels of charcoal, 8,947,500 pounds of corn, 29,408,048 pounds of oats, 5,217,000 pounds of barley, 3,919,400 pounds of bran, 65,978,706 pounds of hay, 7,422,100 pounds of straw, 20,000 pounds of middlings, 40,000 pounds of shorts; 3 for indefinite quantities of fuel, forage, and straw; 51 for transportation; 15 for water and water supply; 16 for printing; 120 for leases; 17 for services; 11 for shoeing public animals; 64 for buildings; 153 for clothing and equipage; 10 for packing boxes; 1 for illuminating gas; 1 for lumber for miscellaneous purposes; 3 for telephones; 4 for sewerage; 1 for wells; 29 for heating apparatus; 1 for building material; 30 for plumbing, etc.; 4 for repairs to buildings; 1 for barrels; 17 for horses; 5 for tableware; 1 for lockers; 12 for gas piping, etc.; 7 for mineral oil; 9 for roadways and sidewalks; 1 for lamps; 2 for mules; 3 for stoves, ranges, and parts; 2 for carts, etc.; 1 for flagstaff; 1 for wire fence; 4 for rubber hose; 1 for wagon parts; 1 for paulins; 2 for wagon covers; 1 for gas machine; 1 for gasoline machine; 1 for boundary monuments; 1 for branch railroad; 1 for constructing bake ovens; 1 for bulkhead; 1 for blue prints; 1 for fire escapes, and 3 for headstones.

Stoves and ranges, and extra parts therefor, were purchased at general depots during the fiscal year to extent of \$61,347.69, as follows:

Kind.	Num-ber.	Total cost.
Cooking stoves.....	54	\$1, 487. 87
Heating stoves.....	796	10, 225. 91
Laundry stoves.....	27	217. 50
Ranges.....	259	16, 859. 00
Furnaces and heaters.....	42	2, 867. 25
Cost of repairs of stoves, etc.....		29, 690. 16
Total.....		61, 347. 69

Horse and mule shoes, horseshoe nails, and shoeing tools were purchased during the year as follows:

Articles.	Pounds.	Total cost.
Horseshoes.....	291, 373	\$10, 045. 77
Mule shoes.....	69, 793	2, 626. 93
Horseshoe nails.....	35, 602	5, 425. 93
Toe calks.....	14, 372	534. 31
Shoeing tools.....		868. 14
Total.....		19, 001. 08

The following described articles of tin and sheet-iron ware were, under authority of the Secretary of War, manufactured at the Fort Leavenworth Military Prison during fiscal year ending June 30, 1894:

Furniture for stoves and ranges.

Articles.	Num-ber.	Material.	Civilian labor.	Prison labor.	Total cost.
Boilers:					
Wash (army range)	856	\$791.52	\$161.10	\$106.93	\$1,059.55
Coffee (army range)	326	120.00	52.77	40.75	213.52
Square	922	1,003.14	226.50	183.97	1,413.70
Round	343	401.64	87.04	67.86	556.54
Wash	6	8.35	1.10	1.00	10.45
Coffee	36	12.55	4.51	4.13	21.19
Bake pans:					
Army range	517	98.28	42.31	30.41	171.00
Sheet-iron, assorted	698	213.62	79.40	41.53	334.55
Tea kettles (army range)	810	304.32	105.15	65.76	475.23
Steamers:					
Army range	161	27.46	22.94	10.07	60.47
Square, assorted	29	17.91	6.90	3.05	27.86
Pots, coffee	274	33.70	28.83	24.18	86.71
Pot covers (army range)	42	2.15	.84	.43	3.42
Pans:					
Dish	36	14.49	3.85	3.19	21.53
Sauce and stew	168	34.95	10.90	9.30	55.15
Dippers	297	23.07	29.72	15.86	68.65
Stovepipe (joints), common	17,116	1,810.96	119.96	115.23	2,046.17
Stovepipe (elbows), common	3,052	242.62	153.17	91.92	487.71
Stovepipe (taper joints), common	500	83.43	6.86	7.80	98.18
Stovepipe (T-joints), common	64	8.16	3.22	4.00	15.38
Stovepipe (collars)	995	36.03	9.43	10.40	57.86
Flue stoppers	786	28.82	22.39	23.23	74.44
Camp stoves	1	2.88	1.33	1.00	5.21
Total.....					7,364.49

HARNESS.

Under authority of the Secretary of War, harness was manufactured at Fort Leavenworth military prison for the Quartermaster's Department during fiscal year ending June 30, 1894, as follows, viz:

Articles.	Num-ber.	Material.	Civilian labor.	Prison labor.	Total cost.
Single sets harness:					
Ambulance, lead	4	\$41.36	\$28.68	\$8.00	\$78.04
Ambulance, wheel	23	256.45	151.79	69.00	477.24
Wagon, wheel	4	56.69	14.41	8.35	79.45
Buckboard (special)	2	58.90	5.00	5.00	68.90
Extra parts for harness		1,773.17	473.58	279.51	2,526.26
Coronas	20	112.00	26.54	20.00	158.54
Total.....					3,388.43

The following are the payments made by quartermasters for purchases for the Army at general depots for use thereat and for shipment elsewhere during the fiscal year ending June 30, 1894, from appropriations pertaining to that period:

Depots.	Regular supplies.	Incidental expenses.	Barracks and quarters.	Army transportation.	Total.
New York	\$63,293.91	\$1,534.88	\$424.29	\$20,682.77	\$85,935.85
Philadelphia	18,070.87	357.66	426.82	14,264.50	33,119.85
St. Louis	11,334.17	3,731.60	148.30	32,714.29	47,928.36
Jeffersonville	99,914.93	17,430.05	217.46	44,654.90	162,217.34
San Francisco	19,118.41	4,266.12	7,070.60	19,615.67	50,070.80
Total.....	211,782.29	30,320.31	8,287.47	131,932.13	382,272.20

Purchases have been made in the departments and at general depots for post bakeries, schools, and gardens, as follows:

Bakeries.....	\$526. 19
Schools.....	4, 668. 02
Total	5, 194. 21

Total cost of all tableware and kitchen utensils purchased, Philadelphia depot, \$11,726.39.

MESS TABLES, STOOLS, COMPANY FIELD DESKS, AND ROPE MATS.

There were manufactured during the fiscal year ended June 30, 1894, at Fort Leavenworth Military Prison, viz:

Articles.	Num-ber.	Material.	Prison labor.	Total cost.
Mess and kitchen tables	234	\$1, 260. 74	\$147. 50	\$1, 408. 24
Mess stools	5, 421	1, 603. 87	122. 25	1, 735. 62
Company field desks	21	119. 83	33. 00	152. 83
Dish cars (without running gear).....	2	21. 36	4. 50	25. 86
Rope mats	58	12. 98	37. 00	49. 98
Total				3, 372. 53

Very respectfully,

D. D. WHEELER,
Major and Quartermaster, U. S. Army.

The QUARTERMASTER-GENERAL.

WAR DEPARTMENT,
QUARTERMASTER-GENERAL'S OFFICE,
Washington, D. C., August 15, 1894.

GENERAL: I have the honor to submit a report of the operations of the mail and record division, the records, files, and miscellaneous claims branch, the claims branch, and the cemeterial branch, also the conducting of fuel tests, for the year ending June 30, 1894.

MAIL AND RECORD DIVISION.

This division was established November 15, 1890, for the purpose of bringing into one division all matters pertaining to the keeping of the records, the briefing, entering, and indexing of all communications received in the office of the Quartermaster-General, as well as the writing and mailing of all letters and indorsements to be sent out. This work was formerly divided among the various branches of the office. To accomplish the consolidation of the records a modification of the card system was adopted.

The following is the number of communications received and number of letters and indorsements sent out during the year ending June 30, 1894:

Original cases.....	12, 716
Received-backs	25, 896
Letters and indorsements mailed	43, 011

RECORDS, FILES, AND MISCELLANEOUS CLAIMS BRANCH.

Miscellaneous claims and accounts.

At the beginning of the fiscal year there were on hand awaiting action 9 miscellaneous claims, amounting to.....	\$3, 840. 00
And 4 accounts, amounting to	90. 96
There were received during the year 168 claims, amounting to.....	39, 688. 78
And 224 accounts, amounting to.....	14, 787. 01

Total, 405 claims and accounts, amounting to..... 58, 406. 75

Upon these final action was taken during the year as follows:

12 claims approved for payment, amounting to	\$895. 96
2 claims referred to other departments, amounting to	916. 37
104 claims referred to the Treasury Department for action, amounting to..	18, 926. 90
Upon which reduction was made of	5, 331. 00
And 47 claims were disallowed, amounting to	14, 629. 55
176 accounts were approved for payment of	7, 982. 34
Being a reduction of	230. 49
26 were referred to other departments to which they pertained, amount- ing to	5, 421. 43
And 19 were disallowed, amounting to	457. 00

Total claims and accounts finally acted upon, 386, amounting to....	<u>54, 791. 04</u>
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There were on hand awaiting action at the close of the fiscal year:

12 claims, amounting to	2, 829. 00
And 7 accounts, amounting to	786. 71

Total, 19 claims and accounts, amounting to	3, 615. 71
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Final action was also taken upon 12 claims, amounting, as presented, to \$1,894.14, which pertained to prior years.

NEWSPAPERS AND PERIODICALS.

One hundred and thirteen military post libraries were supplied with newspapers and periodicals during the fiscal year at a cost of \$3,639.60. These posts were garrisoned by 394 companies and detachments of troops. The selections were for 197 daily, 622 weekly and semi-weekly, and 219 monthly publications.

PRINTING AND BINDING.

During the year 432 requisitions for printing and binding were issued on the Public Printer, of which number 213 were for work in the War Department branch printing office.

The cost for printing and binding during the year, as shown by the bills and estimates thus far received, is \$9,988.88.

CLAIMS BRANCH.

CLAIMS UNDER THE ACT OF JULY 4, 1864.

On July 1, 1893, there were on hand not finally acted upon 98 claims, amounting to \$121,018.37; 1 of these, amounting to \$350 was sent to the Treasury for settlement for \$300, leaving on hand at the close of the year 97 claims, amounting to \$120,668.37.

During the year 12 claims, amounting, as presented, to \$38,023.44, which had previously been investigated and disallowed by the Quartermaster-General for want of proof as to loyalty of the claimants or evidence that the stores were actually taken and used by the Army, were transmitted to the Court of Claims or to the Department of Justice as evidence in similar claims referred to that court by Congress.

CEMETERIAL BRANCH.

At the commencement of the year there were 83 national cemeteries, and no changes having occurred, the number remains the same.

Interments to June 30, 1894:

Known	182, 632
Unknown	149, 932
Total	<u>332, 564</u>

At the commencement of the year there were 73 superintendents in service. During the year 2 others have been appointed, 2 resigned, and 1 has been discharged, leaving 72 in service at the close of the year.

Removals of remains of officers and enlisted men have been made from abandoned post cemeteries and other places to post or national cemeteries, as follows: From the old post cemetery, Fort Brady, Mich., to Riverside Cemetery, Sault Ste. Marie, Mich. From old Fort Bliss, Tex., to the post cemetery established at the new post; from Tunnelton, W. Va., to the Grafton (W. Va.) National Cemetery; from the Crater farm, near Petersburg, Va., to the Poplar Grove (Va.) National Cemetery; from Malvern Hill battlefield, Virginia, to the Glendale (Va.) National Cemetery; and from the Citizens' Cemetery, Gettysburg, Pa., to the National Cemetery at that place.

Headstones.—During the year 7,637 white marble headstones to mark the graves of Union soldiers, sailors, and marines buried in national, post, city, and village cemeteries have been provided from the appropriations for that purpose.

Lodges and outbuildings.—A contract has been made for the construction of a superintendent's lodge (of stone) and a cistern at the Custer Battlefield (Mont.) National Cemetery, and the work commenced June 25, 1894. The outbuildings contracted for during the preceding year, to be erected in the national cemeteries at Fort Leavenworth, Kans.; Soldiers' Home, District of Columbia; Culpeper and Yorktown, Va., and Grafton, W. Va.; and the receiving vault in the Arlington (Va.) National Cemetery, have been completed; and a new brick stable erected in the Jefferson Barracks (Mo.) National Cemetery, to replace a similar structure accidentally destroyed by fire December 13, 1893.

Rostrums.—Permanent rostrums, contracted for during the previous fiscal year, have been erected in the Annapolis (Md.), Yorktown (Va.), Fort Donelson (Tenn.), and Fayetteville (Ark.) National cemeteries.

Flagstaffs.—During the year an iron flagstaff (Nelson patent), 75 feet in length, has been erected in the Richmond (Va.) National Cemetery, and similar staffs ordered for the Camp Butler (Ill.) and Fort Smith (Ark.) National cemeteries. Wooden flagstaffs have been erected in Baton Rouge (La.) and Danville (Ky.) National cemeteries, and the lower mast of the staff at the Salisbury (N. C.) cemetery renewed.

Memorial Day, May 30.—Was duly observed at nearly all the National cemeteries, and the graves decorated as usual.

At the Arlington (Va.) National Cemetery the gates on the eastern front have been repainted, and necessary repairs made to the mansion, outbuildings, water supply, and drainage. The grounds, walks, and drives have been kept in good condition. A contract has been made for the construction of an asphalt driveway connecting with the granolithic pavement heretofore constructed around the mansion, and extending toward the western entrance.

At the Cave Hill (Ky.) National Cemetery the purchase of the additional land situated between burial sections B and C, authorized during the previous fiscal year, has been completed.

At the Custer Battlefield (Mont.) National Cemetery an inexpensive frame structure containing two rooms was erected as a temporary residence for the superintendent. A contract has since been made for the erection of a permanent lodge (of stone).

At the Finns Point (N. J.) National Cemetery about 100 cubic yards of stone riprap were placed at the southwest corner of the inclosing wall, to protect the foundation at that point from damage by high water.

At the Gettysburg (Pa.) National Cemetery the four gun monuments,

were remounted on iron carriages, and the water supply increased by connection with the city water system.

At the Mobile (Ala.) National Cemetery repairs have been made to the lodge, and the water supply improved by the construction of a driven well 90 feet in depth.

At the Nashville (Tenn.) National Cemetery repairs have been made to the lodge, outbuildings, and water supply, and the drives and walks kept in good order.

At the San Francisco (Cal.) National Cemetery the lodge and flag-staff have been painted, the grounds kept in good order, and the pump connected with the water supply repaired. Headstones have been erected to mark the graves of the officers and enlisted men removed to that cemetery from abandoned military posts in Arizona and elsewhere.

At the Vicksburg (Miss.) National Cemetery the southeast corner of the inclosing wall has been rebuilt and the wall repointed where necessary, the lodge and outbuildings repaired, and the grounds, drives, water supply, and drainage kept in good order.

At the other national cemeteries necessary repairs have been made and the grounds properly cared for.

Indigent soldiers.—Under the acts of Congress (deficiency and sundry civil, approved March 3, 1893) making appropriations "for expenses of burying in the Arlington National Cemetery or in the cemeteries of the District of Columbia indigent ex-Union soldiers, sailors, and marines of the late civil war who die in the District of Columbia," accounts have been paid during the fiscal year for the burial of 36 such persons at a total cost of \$1,351.

Roadways.—The roadway from the Mound City National Cemetery to Mounds Junction, on the Illinois Central Railroad, in Pulaski County, Ill., a distance of 14,469 feet, authorized by act of Congress (sundry civil) approved March 3, 1891, has been completed, at a total cost of \$9,974.10, including \$4,139.92 expended during the previous year.

The work of draining and repairing the road to the Hampton (Va.) National Cemetery, authorized by acts of Congress (sundry civil) approved March 2, 1889, and August 30, 1890, is awaiting action on the part of the board of supervisors of Elizabeth City County, Va., in accordance with the provisions of an act of the general assembly of the State of Virginia, approved February 21, 1894, authorizing said board to acquire the right of way, by purchase or condemnation, and convey the same to the United States free of charge.

Under the act (sundry civil) approved March 3, 1893, making an appropriation for "repairing roadways to national cemeteries," necessary repairs have been made to the roadways leading to the national cemeteries at Alexandria, Va., Antietam, Md., Corinth, Miss., Culpeper, Va., Fayetteville, Ark., Florence, S. C., Fredericksburg, Va., Marietta, Ga., Mound City, Ill., Newbern, N. C., Port Hudson, La., Richmond, Va., Springfield, Mo., Staunton, Va., and Vicksburg, Miss.

Amount expended during the year, \$3,636.21.

The roadway to the Vicksburg (Miss.) National Cemetery is now undergoing extensive repairs under a contract dated May 21, 1894. It is expected that the work will be completed on or before September 30, 1894.

Monuments or tablets at Gettysburg.—The purchase of land for sites for monuments to mark the positions occupied by commands of the regular Army at the battle of Gettysburg, and for approach roads thereto, as provided by the acts of March 3, 1887, October 2, 1888, and March 2, 1889, has been completed.

Each site has been marked with an iron tablet inscribed with the

name of the command and the date of their engagement, and at each site has been placed a cannon mounted on an iron gun carriage.

The work of constructing the approaches to these sites is now in progress and will soon be completed.

A statement showing the expenditures on account of the national cemeteries during the year is submitted herewith.

(See Statement A.)

CONDUCTING OF FUEL TESTS.

In the supply of fuel to the Army the standard unit of allowance is the cord of standard oak wood.

Coal is the fuel most generally supplied, and in order to fix the amount that may be issued to troops or sold to an officer, in lieu of a cord of oak wood, it is essential that the value as fuel of the particular coal issued or sold be known. To establish the value of the various coals is equally necessary in order that in making contracts for the supply of coal award in every instance may be made to the lowest responsible bidder for the best and most suitable article, as required by law.

These fuel tests have been conducted during the past year under the immediate supervision of the Quartermaster-General's Office.

The coals tested during the year, with the number of pounds of each required to equal 1 cord of standard oak wood, are as follows:

Name.	Where mined.	Rating.
		<i>Pounds.</i>
Sheridan (Grinnell mine)....	Sheridan, Wyo., on Big Goose Creek.....	3,454
Linton nut (mine No. 2)	Linton, Green County, Ind.....	2,698
Sand Coulee.....	Sand Coulee, Mont.....	2,722
Chinook (Black Diamond mine).	About 15 miles east of Fort Assiniboine, Mont.....	3,380
Weir City (run of mine)	Weir City, Cherokee County, Kans.....	2,165
Weir City (lump).....	.....do.....	1,988
Hanna.....	Hanna, Carbon County, Wyo.....	2,584
Gallup.....	Near Gallup Station, A. and P. R. R., N. Mex.....	2,652
Ladd (third vein).....	Ladd, Bureau County, Ill.....	2,680
Branch.....	Near West Bellville, St. Clair County, Ill.....	2,852
Mount Olive.....	Mount Olive, Madison County, Ill.....	2,641
Castle Gate.....	Castle Gate, Emery County, Utah.....	2,639
Westminster Brymbo.....	North Wales.....	2,487
Seattle (Newcastle mine)	King County, Wash.....	3,582
Franklin.....	.....do.....	3,067
Nanaimo (shaft No. 1).....	Vancouver Island, British Columbia.....	2,548
White-ash steam (Black Diamond mine, vein No. 14).	Near Green River, King County, Wash.....	3,267
Diamond House (Black Diamond mine, vein No. 2).	.....do.....	3,143
Pleasant Valley.....	Schofield, Emery County, Utah.....	2,822
Huntington (run of mine)...	Sebastian County, Ark.....	1,765
Huntington (lump).....	.....do.....	1,739
Wallsend (New Castle mine).	Newcastle, New South Wales.....	2,593
Scotch Splint (Hamilton mine)	Near Glasgow, Scotland.....	3,024
New Wellington (Northfield mine).	Departure Bay, Vancouver Island, British Columbia.....	2,893
Comox.....	Union District, British Columbia.....	2,222
Wellington-Dunsmuir.....	Departure Bay, Vancouver Island, British Columbia.....	2,620
Frontenac (run of mine).....	Frontenac, Kans.....	1,880
Frontenac (lump).....	.....do.....	1,866
Toluca (run of mine).....	Toluca, Ill.....	2,227
Toluca (lump).....	.....do.....	2,190
Rockvale.....	Rockvale, Colo.....	2,229
Box Elder (Cowan mine)	About 8 miles west from Fort Assiniboine, Mont.....	3,181
Lander.....	About 8 miles east from Lander, Fremont County, Wyo....	2,862
Jellico.....	Jellico, Tenn.....	2,219
Patton.....	Patton, Walker County, Ala.....	2,188
Coal Valley.....	Coal Valley, near Days Gap, Walker County, Ala.....	2,167

Very respectfully,
Captain and Assistant Quartermaster, U. S. Army.

The QUARTERMASTER-GENERAL.

A.—Statement of disbursements of appropriation for national cemeteries during the fiscal year ending June 30, 1894.

Name of cemetery.	Employees.	Tools, stores, and miscellaneous expenditures.	Inclosures.		Purchase of land.	Lodges—construction and repair.	Outhouses (sheds, stables, etc.).	Trees, plants, etc.	Drainage.
			Construc- tion.						
Alexandria, La.	\$272.00	\$24.81					\$1.00		
Alexandria, Va.	398.00	11.06				\$20.00	15.00	\$13.00	
Andersonville, Ga.	590.75	28.40				34.53	35.67	74.50	
Annapolis, Md.	94.50	23.93				95.75	933.19		\$7.50
Antietam, Md.	420.00	24.74	21.00						
Arlington, Va.	8,200.00	840.04	9,928.96		\$262.00	3,561.30	2,843.63	442.60	537.50
Balls Bluff, Va.	25.00								
Barrancas, Fla.	278.00	33.03	138.00				39.00		29.75
Baton Rouge, La.	860.00	6.50				38.90			4.80
Battle Ground, D. C.		14.25	34.25			7.50		10.00	9.00
Beaufort, S. C.	554.50		24.00			9.00			
Beverly, N. J.	3.50	5.75	51.47			73.22			
Brownsville, Tex.	420.00	128.00				16.50		28.00	
Camp Butler, Ill.	308.25	58.96	61.80		14.75	42.60			
Camp Nelson, Ky.	275.00	25.91	48.16		18.00	74.50	110.00		8.60
Cave Hill, Ky.	40.00	5.47				7.00			
Chalmette, La.	861.50	22.85				.36			
Chattanooga, Tenn.	2,008.37	38.45	145.50						111.12
Citr Point, Va.	276.83	32.19	58.00			30.00	9.00		72.00
Cold Harbor, Va.		8.88	17.50			5.50	4.50		
Cornuth, Miss.	1,020.00	58.20	36.00					27.50	79.96
Crown Hill, Ind.		.37							
Culpeper, Va.	175.00	4.80	3.00						
Custer Battlefield Mont.			48.56			12.70	1,050.00		
Cypress Hills, N. Y.	679.87	17.99				68.41	241.80		
Danville, Ky.	75.00	.37			3.00	58.00	7.60		
Danville, Va.	120.00		20.70						
Fayetteville, Ark.	220.00	77.04	51.41		23.40	31.80		4.00	5.90
Flims Point, N. J.		129.45	211.83			40.16	948.49	18.19	14.17
Florence, S. C.	148.75	10.90				33.50	17.50		
Fort Donelson, Tenn.	118.00	10.45	17.50		1.50	19.65	832.00	2.00	
Fort Gibson, Ind. T.	275.00	63.55	25.80		8.00				
Fort Harrison, Va.	25.00	2.05	13.75		0.10	156.85	8.30		8.00
Fort Leavenworth, Kans.	500.00	11.90	3.80		2.65	41.35	949.45		
Fort McPherson, Nebr.	200.00	32.00	4.00		3.50	13.80			
Fort Scott, Kans.	240.00	74.05				38.06	3.50	14.00	
Fort Smith, Ark.	299.99	98.75			20.00	37.51	3.80	25.00	
Fredericksburg, Va.	575.00	9.41	31.00			5.00	11.00		
Gettysburg, Pa.	524.00	12.40	80.00					3.50	
Glendale, Va.		14.76	41.00			40.00			
Grafton, W. Va.	190.00	6.16	53.00			23.00	967.50		

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Hampton, Va.....	507.50	19.52	41.50							75.00	5.00		
Jefferson Barracks, Mo.....	1,106.62	144.32	45.70							14.83	907.30		
Jefferson City, Mo.....	99.75	6.55				29.70							
Keokuk, Iowa.....	70.50	9.95								5.60			
Knoxville, Tenn.....	173.25	19.39	2.50							12.28		25.45	
Lebanon, Ky.....	87.00	21.78	.60							184.38			
Lexington, Ky.....	45.00	.36											
Little Rock, Ark.....	450.00	53.02	114.95			355.00	5.00			67.40		17.20	
Loudon Park, Md.....	230.62	44.16	58.25							66.75	15.00	23.00	13.25
Marietta, Ga.....	960.00	34.91	11.50				14.75			2.40			
Memphis, Tenn.....	1,050.84	35.61	13.80							15.00			
Mexico City, Mex.....	336.00	51.20	23.00									3.00	
Mill Springs, Ky.....	139.00	17.82	150.75			69.10	6.50			107.55		3.00	
Mobile, Ala.....	83.00						24.50			35.25			17.70
Mound City, Ill.....	450.00	7.65											
Nashville, Tenn.....	1,700.41	78.75	121.90			13.75				121.19	44.45	30.50	
Natchez, Miss.....	470.50	28.76											
New Albany, Ind.....	227.50	11.32	24.93			185.83				86.49			
Newbern, N. C.....	180.00	12.49	3.00							41.15		28.80	
Philadelphia, Pa.....	695.00	224.35	14.50			36.00				26.43	11.88		
Poplar Grove, Va.....	223.81	86.04	109.25			24.65	8.00			29.60	3.81		5.00
Port Hudson, La.....	262.50	28.65	22.50							51.65	16.00		
Quincy, Ill.....	25.00												
Raleigh, N. C.....	188.50	4.50	43.00							14.76			
Richmond, Va.....	413.00	27.50	123.35							40.00			3.65
Rock Island, Ill.....			120.00										
Salisbury, N. C.....	220.00	22.60					1.50			43.00	2.45		
San Antonio, Tex.....	95.00	5.70	45.00			4.70				8.49			
San Francisco, Cal.....	499.87									75.00			
Seven Pines, Va.....		13.96	59.00				2.00			3.00			
Shiloh, Tenn.....	447.33	36.25	9.25							8.00	21.37		16.00
Soldiers' Home, D. C.....	960.00	57.68	92.75							37.00	1,617.50	75.00	14.00
Springfield, Mo.....	236.87	45.00	31.25							3.75	3.50		
St. Augustine, Fla.....	68.75												
Staunton, Va.....	61.50	17.25	22.50										
Stone's River, Tenn.....	475.15	18.30	85.50							25.00	36.21		5.95
Vicksburg, Miss.....	2,603.16	33.15											
Wilmington, N. C.....	112.30	18.91	12.50							71.68			
Winchester, Va.....	225.00	2.36	3.00							7.00			
Woodlawn, N. Y.....	100.00	3.94											
Yorktown, Va.....	103.00	50.68	55.64								2,384.07		
Soldiers' lots.....	222.20												
Miscellaneous.....													
Total.....	37,646.34	2,792.95	12,822.42	78.56	917.88	330.50	3,005.00	5,851.52	15,136.37	868.15	981.90		

A.—Statement of disbursements of appropriation for national cemeteries during the fiscal year ending June 30, 1894—Continued.

Name of cemetery.	Barrack and office furniture and stoves.	Flagstaffs and monuments.	Water supply.	Interments.	Fuel.	Forage.	Shoeing animals.	Transportation, tolls, etc.	Repairs to harness.	Flags and bal-lards.	Lawn mowers.	Total.
Alexandria, La.	\$3.70				\$30.10	\$81.70	\$2.00	\$6.00	\$2.00			\$429.27
Alexandria, Va.	2.50	\$10.50	\$50.00		68.20							639.01
Andersonville, Ga.						164.30	14.00					963.56
Annapolis, Md.	2.50	28.00	35.00		61.20		2.00	11.50				1,437.31
Antietam, Md.	2.50	5.00			69.08			32.50				574.82
Arlington, Va.	30.00	76.50	446.75	460.00	437.26	410.46		74.25				29,051.17
Balls Bluff, Va.												25.00
Barranca, Fla.		10.00						1.38				527.17
Baton Rouge, La.		59.43			39.57	85.00		3.39	0.50			599.65
Battle Ground, D. C.	2.50				63.05							140.55
Beaufort, S. C.					62.65	203.90						854.05
Beverly, N. J.					63.75							247.69
Brownsville, Tex.			50.00		70.00		10.50					726.50
Camp Butler, Ill.	12.00	.60	53.50		38.24							577.79
Camp Nelson, Ky.		4.50	40.60		63.00	65.33		8.87				729.87
Cave Hill, Ky.	3.21		12.72		49.18							3,122.58
Chalmette, La.		32.80			73.50	119.26	5.67					1,132.94
Chatanooga, Tenn.					31.55	269.63	23.25	5.10				2,632.97
City Point, Va.	3.50		4.00		98.30	134.93	2.50	10.00				730.34
Cold Harbor, Va.	2.50	4.70			17.08							60.64
Corinth, Miss.		27.10		6.00	45.33	227.21	31.00	1.20				1,559.50
Crown Hill, Ind.												.37
Culpeper, Va.	2.50	1.00			39.90			25.50				1,314.40
Custer Battlefield, Mont.					100.33							457.10
Cypress Hills, N. Y.	14.30		16.50		67.32	92.44	12.00	24.00				1,203.02
Danville, Ky.		100.40										211.47
Danville, Va.	2.50		40.00		73.20							297.20
Fayetteville, Ark.	.75	6.50	29.80		32.00							1,466.84
Finns Point, N. J.		15.00	39.35		85.00							498.13
Florence, S. C.				13.30	32.35							238.80
Fort Donelson, Tenn.					35.00			18.00				1,074.10
Fort Gibson, I. T.		13.30			47.60							450.25
Fort Harrison, Va.	2.50	4.00			75.20							299.75
Fort Leavenworth, Kans.					71.84	68.27						1,649.16
Fort McPherson, Nebr.			105.00		332.84							680.94
Fort Scott, Kans.	5.00		53.08		34.96			1.00				454.87
Fort Smith, Ark.		.75	24.91		32.96							603.67
Fredericksburg, Va.	2.50	25.00		6.00	64.60	91.33	2.50					823.34
Gettysburg, Pa.	2.50	410.03		0.00	71.40			50.00				1,159.85
Glendale, Va.	6.00	10.00		2.50	52.00			1.50				166.76
Grafton, W. Va.	4.90	4.45	9.00	0.00	25.98							1,312.98
Hampton, Va.	2.50	6.00		76.00	70.86			68.50				878.49

REPORT OF CAPT. C. P. MILLER, ASSISTANT QUARTERMASTER, U. S. ARMY.

WAR DEPARTMENT,
QUARTERMASTER-GENERAL'S OFFICE,
Washington, D. C., August 13, 1894.

GENERAL: I herewith respectfully submit my report of the operations of the barracks and quarters branch of this office during the past fiscal year.

Under the head of "Barracks and quarters," Congress provided by the act making appropriations for the support of the Army, approved February 27, 1893.....	\$700, 000. 00
Authorized for construction and repairs	\$576, 634. 73
Authorized for rent and labor	108, 316. 87
	<hr/> 684, 951. 60
Balance, June 30, 1894.....	15, 048. 40

NEW CONSTRUCTION.

There has been authorized during the year from the appropriation for barracks and quarters, for the erection of public buildings at different military posts, consisting of barracks, officers' quarters, storehouses, stables, etc., the sum of \$343,555.11.

For the construction and repair of hospitals at military posts already established and occupied there have also been authorized from the appropriation for that purpose expenditures amounting to \$49,767.34, and for the construction and repair of hospital stewards' quarters at military posts already established and occupied, from the appropriation "for construction of quarters for hospital stewards," \$6,955.76.

REPAIRS.

There have been authorized for repairs, alterations, and improvements to public buildings, and for the purchase of building materials and tools at various posts, expenditures amounting to \$233,079.62.

The different military departments and depots to which this money has been distributed are shown in the annexed statement.

Recapitulation of the expenditures authorized for construction, repairs, etc., from the appropriation for barracks and quarters, 1893-'94.

Department or depot, etc.	Construc- tion.	Repairs.	Total.
Department of the East.....	\$183, 257. 33	\$51, 005. 77	\$234, 263. 10
Department of the Missouri	61, 373. 63	33, 158. 91	94, 532. 54
Department of the Platte.....	83, 261. 07	16, 617. 48	49, 878. 55
Department of Dakota.....	7, 241. 97	39, 574. 12	46, 816. 09
Department of Texas.....	31, 478. 63	17, 007. 24	48, 485. 87
Department of the Colorado	9, 485. 47	30, 345. 10	39, 830. 57
Department of the Columbia	2, 633. 38	16, 353. 02	18, 986. 40
Department of California	3, 107. 63	9, 505. 34	12, 612. 97
Columbus barracks	3, 190. 00	4, 757. 84	7, 947. 84
Dauids Island.....		5, 000. 00	5, 000. 00
Jefferson barracks	8, 526. 00	2, 840. 75	11, 366. 75
Willets Point		4, 201. 52	4, 201. 52
Jeffersonville depot.....		232. 36	232. 36
New York depot.....		1, 234. 22	1, 234. 22
Philadelphia depot.....		731. 90	731. 90
St. Louis depot		203. 75	203. 75
Hot Springs Army and Navy Hospital.....		310. 30	310. 30
Total	343, 555. 11	233, 079. 62	576, 634. 73

The following list shows the different buildings which have been authorized to be constructed at the various posts, the expenditures therefor being included in the foregoing statements under the head of construction:

Post.	Designation.	Material.	Amount authorized.
<i>Department of the East.</i>			
Fort Barrancas.....	Coal house.....	Brick and wood...	\$773. 00
	3 sets noncommissioned staff officers' quarters.	Wood.....	4, 107. 82
Fort Columbus.....	1 double set officers' quarters.....	Brick.....	13, 650. 00
Fort Ethan Allen.....	2 cavalry stables.....	do.....	24, 600. 00
	2 double sets officers' quarters.....	do.....	27, 453. 00
	4 sets bachelor officers' quarters.....	do.....	12, 386. 00
	Pump house.....	do.....	4, 230. 00
	Wagon shed.....	Wood.....	2, 300. 00
Key West barracks.....	Fuel shed.....	do.....	1, 295. 85
Macison barracks.....	Coal house, addition to mess hall.....	Stone.....	1, 500. 00
	Coal house at Henderson Bay.....	Wood.....	1, 172. 73
Fort McHenry.....	Water closet building.....	Brick.....	1, 815. 00
Fort Monroe.....	Administration building.....	do.....	10, 833. 00
	Observing stations and bombproofs (artillery practice).	Wood.....	111. 28
	1 double set officers' quarters.....	do.....	6, 800. 00
Mount Vernon barracks.	Bath-room for Indian teachers' quarters, etc.	do.....	385. 63
Fort Niagara.....	Coal shed.....	do.....	1, 625. 00
Fort Ontario.....	Addition to barracks.....	Stone.....	496. 00
Plattsburg barracks.....	2 double sets officers' quarters.....	Brick.....	26, 787. 00
	8 sets bachelor officers' quarters.....	do.....	20, 349. 00
St. Francis barracks.....	Renewal of second story of barracks.....	Coquina and wood.	1, 893. 15
Fort Schuyler.....	Detached lavatory.....	Brick.....	3, 500. 00
	Shelter on dock.....	Wood.....	39. 87
Fort Thomas.....	4 sets bachelor officers' quarters.....	Brick.....	9, 377. 00
	Corral.....	Wood.....	126. 00
Fort Wadsworth.....	Addition to wagon shed.....	do.....	185. 00
Washington barracks.	1 double set noncommissioned staff officers' quarters.....	Brick.....	3, 466. 00
	Gun shed.....	Wood.....	2, 500. 00
	Total.....		183, 257. 33
<i>Department of the Missouri.</i>			
Fort Leavenworth.....	2 double sets officers' quarters.....	Brick.....	24, 384. 00
Fort Mackinac.....	Stable for horses of commanding officer.....	Wood.....	216. 36
Fort Reno.....	Addition to barracks No. 25.....	do.....	1, 432. 39
Fort Riley.....	3 double sets officers' quarters.....	Brick.....	32, 196. 00
Fort Supply.....	Coal shed.....	Wood.....	869. 88
Fort Wayne.....	Coal shed.....	do.....	2, 275. 00
	Total.....		61, 373. 63
<i>Department of the Platte.</i>			
Fort D. A. Russell.....	Administration building.....	Brick.....	6, 610. 00
	Teamsters' quarters.....	Wood.....	420. 40
	Porch additions to 6 sets noncommissioned staff officers' quarters.	do.....	252. 37
Fort McKinney.....	Two frame cavalry stables.....	do.....	6, 250. 00
Fort Niobrara.....	Administration building.....	Stone and wood..	7, 740. 00
	Addition to quarters No. 1, building No. 11.	Wood.....	120. 30
Fort Robinson.....	Magazine.....	Brick.....	495. 00
Fort Washakie.....	Barrack building.....	Stone.....	11, 373. 00
	Total.....		33, 261. 07
<i>Department of Dakota.</i>			
Fort Assiniboine.....	Coal shed.....	Wood.....	418. 03
	Rebuilding portion of granary No. 34.....	Brick.....	922. 32
Fort Custer.....	Wagon shed.....	Wood.....	207. 43
Fort Keogh.....	Addition to barracks No. 19.....	do.....	1, 586. 37
	Storeroom addition to same.....	do.....	205. 16
	Addition to barracks No. 70.....	do.....	369. 24
Camp Merritt.....	Addition to officers' quarters.....	do.....	150. 00
Fort Missoula.....	Double set officers' quarters.....	do.....	1, 609. 20
Fort Yellowstone.....	Hay shed.....	do.....	1, 275. 03
	Seven fuel sheds for officers' quarters and barracks.	do.....	499. 19
	Total.....		7, 241. 97

Post.	Designation.	Material.	Amount authorized.
<i>Department of Texas.</i>			
Fort Bliss	Magazine	Wood and iron....	\$147.50
Fort McIntosh	Gun shed.....	Brick	434.00
Fort Ringgold	Cavalry stable.....	Wood.....	2,907.50
Fort Sam Houston.....	Eight sets bachelor officers' quarters.....	Brick.....	27,800.00
San Antonio.....	Coal shed.....	Wood.....	129.63
	Total.....		31,478.03
<i>Department of the Colorado.</i>			
Fort Bayard	Magazine	Adobe	284.30
Fort Grant	do	do	575.00
Fort Logan	Band barrack.....	Brick.....	3,620.00
	Reconstruction of guardhouse	do	4,204.00
San Carlos.....	Bath house.....	Adobe	620.00
Whipple barracks	Water closet for troops	Wood.....	82.17
	Total.....		9,485.47
<i>Department of the Columbia.</i>			
Fort Canby.....	Base-line houses on target range at Sand Island.....	Wood.....	35.38
Vancouver barracks ...	Wagon shed.....	do	400.00
Fort Walla Walla	Coal shed.....	do	2,198.00
	Total.....		2,633.38
<i>Department of California.</i>			
Alcatraz Island.....	Closet for enlisted men.....	Wood.....	124.63
Benicia barracks	One single set officers' quarters	do	2,500.00
	Addition to subsistence storehouse	do	473.00
	Total.....		3,107.63
<i>Independent posts, etc.</i>			
Columbus barracks.....	Fire escapes on main building	Iron	600.00
	Workshop building	Brick	2,500.00
			3,100.00
Jefferson barracks.....	Quartermaster's stable.....	do	5,193.00
	Workshops	do	3,333.00
			8,526.00
	Total.....		11,716.00

Authorizations have also been made from the appropriations for regular supplies and Army transportation, for construction of buildings, etc., pertaining to these appropriations, as follows:

Appropriation for regular supplies.

Post.	Designation.	Material.	Amount authorized.
Fort Reno	Forage house.....	Brick	\$1,850.00
Jefferson Barracks.....	do.....	do	3,088.00

Appropriation for Army transportation.

Post.	Designation.	Material.	Amount authorized.
Key West Barracks	Officers' bath house	Wood.....	\$143.50
Do.....	Boat and bath house	do	275.50

MILITARY POSTS.

For the construction of buildings at, and the enlargement of, such military posts as, in the judgment of the Secretary of War, may be necessary, Congress, in making appropriations for sundry civil expenses of the Government for the fiscal year ending June 30, 1894, provided. \$350,000.00

The following amounts from prior appropriations for military posts also became available for expenditure within the fiscal year 1893-'94:

Balance reported June 30, 1893.....	120,397.30
Savings accruing after June 30, 1893, from allotments made in 1892-'93 to the following posts:	
Fort McKinney.....	18,776.80
Fort Brady.....	27.00
Fort Crook.....	1,848.44
Fort Ethan Allen (amount made chargeable to barracks and quarters 1893).....	17,839.76
	38,492.00
Balance of allotment made on December 3, 1891, for construction at Fort Wayne, not begun till this fiscal year.....	62,000.00
Total to be accounted for.....	570,889.30

The above sum has been apportioned as follows:

Post.	Designation.	Amount allotted.
Fort Ethan Allen.....	Double barrack, two double sets noncommissioned staff officers' quarters, fuel storehouse, shop building, quartermaster's stable, blacksmith shop, extra work on new buildings, advertising, printing, etc.	\$51,808.04
Madison barracks	Double barrack, two double sets noncommissioned staff officers' quarters, and extra work on new buildings.	34,200.10
Plattsburg barracks	Barracks for four companies \$43,387.00 Less amount charged to special appropriation for post..... 2,799.16 40,587.84 Add cost of extra work on new buildings and printing 1,617.82	42,205.66 46,670.10
Fort Thomas	Two double sets officers' quarters, double barrack, extra masonry, and additional windows for new barrack, and printing.	
Fort Sheridan.....	Extra work on new buildings and salary of architect.....	2,066.00
New post near Little Rock, Ark.	Attorney's fee.....	200.00
Fort Wayne	Two double barracks and advertising for same	55,029.34
Fort Crook	Hospital, hospital steward's quarters, two double sets officers' quarters, three double sets noncommissioned staff officers' quarters, extra work on new buildings, salaries, and advertising.	63,845.56
Fort Logan	Double barrack and two double sets officers' quarters	50,975.00
Presidio of San Francisco ...	Double barrack and miscellaneous expenses.....	34,035.81
Columbus barracks	Mess hall and extra work on new buildings.....	32,718.00
Jefferson barracks.....	Double barrack and advertising	23,266.93
Willets Point.....	Double barrack.....	22,716.00
	Miscellaneous expenditures	184.15
	Balance, June 30, 1894	110,908.11
	Total	570,889.30

The character and cost of the buildings authorized during the year at the different military posts and chargeable to the amount indicated in the preceding table are as stated below.

The expense of plumbing, heating, and gas piping in the buildings, unless otherwise shown, is chargeable to other appropriations of the Quartermaster's Department.

FORT ETHAN ALLEN, VT.

The following-named additional buildings have been contracted for and completed at this post:

One double cavalry barrack (brick), No. 16	\$32,000.00
Two double sets of noncommissioned staff officers' quarters (brick), Nos. 38 and 39	7,000.00
One fuel storehouse (wood), No. 30	2,200.00
One shop building (brick), No. 37	3,000.00
One quartermaster's stable (brick), No. 31	5,400.00
One blacksmith shop (brick), No. 36	1,870.00
Total	51,470.00
Plumbing in barracks No. 16	2,708.00
Plumbing in noncommissioned staff officers' quarters, Nos. 38 and 39	1,225.00
Total	3,933.00
Heating in barracks No. 16	3,864.47
Gas piping in barracks No. 16	121 52
Gas piping in noncommissioned staff officers' quarters, Nos. 38 and 39	97.21
Total	218.73

MADISON BARRACKS, N. Y.

At this post there have been contracted for during the year—

One double barrack (brick), No. 34	\$26,700.00
Two double sets noncommissioned staff officers' quarters (brick), Nos. 69, 70, 71, 72	6,800.00
Total	33,500.00
Plumbing in barracks No. 34	3,100.00
Plumbing in two double sets noncommissioned staff officers' quarters, Nos. 69 to 72	2,300.00
Total	5,400.00
Heating in barracks No. 34	3,764.00
Gas piping in barracks No. 34	150.00
Gas piping in two double sets noncommissioned staff officers' quarters, Nos. 69 to 72	150.00
Total	300.00

PLATTSBURG BARRACKS, N. Y.

There is now being built at this post under contract made during this fiscal year—

One four-company barrack (brick), Nos. 5 to 8	\$43,387.00
Of this amount \$2,799.16 has been charged to the special appropriation for construction of the post.	
Plumbing in the barracks	5,771.00
Heating in the barracks	9,286.00
Gas piping in the same	220.00
Total	15,277.00

FORT THOMAS, KY.

Work at this post is being continued by the construction of—

Two double sets of officers' quarters (brick), Nos. 50 to 52.....	\$20,540.00
One double barrack (brick), Nos. 48 and 49	23,300.00
Extra masonry in barracks.....	2,626.50

Total	46,466.50
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Plumbing in two double sets officers' quarters, Nos. 50 to 52.....	1,860.00
Plumbing in one double barrack, Nos. 48 and 49	1,783.00
Heating in two double sets officers' quarters.....	2,720.00
Heating in one double barrack	4,687.00
Gas piping in two double sets officers' quarters	64.00
Gas piping in double barracks.....	152.00
Gas fixtures for two double set officers' quarters and one barrack.....	545.00
Gas machines for same.....	1,000.00

Total	12,811.00
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FORT WAYNE, MICH.

In 1891 an allotment was made by the Secretary of War for construction of additional buildings at this post, but work thereon was not commenced until this year, when the following were contracted for and are now being erected:

Two double barracks (brick), Nos. 1 and 2.....	\$55,000.00
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Plumbing in the barracks.....	3,782.00
Heating in the barracks.....	6,415.00
Gas piping in the barracks.....	200.00

Total	10,397.00
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FORT CROOK, NEBR.

During the year the construction of the following buildings has been authorized at this post and contracts therefor entered into, with the exception of the hospital steward's quarters:

Hospital (brick and stone).....	\$20,775.00
Extra work on same	110.00
Hospital steward's quarters.....	1,500.00
Two double sets officers' quarters (brick and stone), Nos. 1 and 2.....	29,778.99
Extra work on same	296.00
Three double sets noncommissioned staff officers' quarters (brick and stone), Nos. 21 to 23.....	9,521.01

Total.....	61,981.00
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Plumbing in hospital	1,275.84
Plumbing in two double sets officers' quarters, Nos. 1 and 2.....	2,048.62
Plumbing in three double sets noncommissioned staff officers' quarters, Nos. 21, 22, and 23.....	1,351.38

Total.....	4,675.84
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Heating in hospital	3,986.46
Heating in two double sets officers' quarters Nos. 1 and 2.....	2,690.00

Total.....	6,676.46
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Gas piping in hospital	117.70
Gas piping in two double sets officers' quarters, Nos. 1 and 2	160.00
Gas piping in three double sets noncommissioned staff officers' quarters, Nos. 21, 22, 23	105.00

Total	382.70
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FORT LOGAN, COLO.

This post is being enlarged by the erection of—

One double barrack (brick), Nos. 40 and 41.....	\$30,875.00
Two double sets officers' quarters (brick), Nos. 22 to 25.....	20,100.00
Total.....	50,975.00
Plumbing in barracks Nos. 40 and 41.....	3,149.00
Plumbing in officers' quarters Nos. 22 to 25.....	1,668.00
Total.....	4,817.00
Heating in barracks Nos. 40 and 41.....	4,385.00
Heating in officers' quarters Nos. 22 to 25.....	1,297.00
Total.....	5,682.00

COLUMBUS BARRACKS, OHIO.

There is in course of erection at this station—

Consolidated mess hall and administration building (brick).....	\$32,686.00
Plumbing in same.....	959.00
Heating apparatus.....	3,963.00
Cooking apparatus.....	2,554.00
Gas piping.....	572.00
Total.....	40,734.00

JEFFERSON BARRACKS, MO.

During the year there has been constructed at this post—

One double barrack building (brick), No. 44.....	\$23,203.00
Plumbing in same.....	1,856.00
Heating in same.....	4,296.00
Total.....	29,355.00

WILLETS POINT, NEW YORK.

There is being constructed at this post under contract entered into during this fiscal year—

One double barrack (brick), No. 110.....	\$22,716.00
Plumbing in same.....	2,231.00
Heating in same.....	2,425.00
Total.....	27,372.00

FORT HARRISON, MONT.

The following buildings have been contracted for at this post, in addition to the water supply and sewer systems, and a branch railroad, the cost of the buildings proper being charged to the \$100,000 appropriated by the act of Congress approved May 12, 1892:

One double barrack (brick).....	\$30,588.00
Three double sets officers' quarters (brick).....	32,502.00
Guardhouse (brick).....	5,575.90
One double set noncommissioned staff officers' quarters (brick).....	2,740.00
Quartermaster's stable (brick).....	4,610.00
Bakery (brick).....	1,498.00
Scale house (wood).....	440.00
Quartermaster and subsistence storehouse (brick).....	6,533.00
Total.....	84,486.90

Plumbing in barracks.....	\$2, 538. 35
Plumbing in officers' quarters.....	2, 476. 65
Plumbing in guardhouse.....	458. 26
Plumbing in noncommissioned staff officers' quarters.....	381. 00
Plumbing in quartermaster's stable	230. 00

Total	6, 084. 26
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Heating in barracks.....	3, 634. 00
Heating in officers' quarters.....	3, 279. 00
Heating in guardhouse.....	374. 00

Total	7, 287. 00
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Gas piping in barracks.....	267. 15
Gas piping in officers' quarters.....	286. 26
Gas piping in guardhouse	40. 04

Total	593. 45
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MILITARY POST NEAR LITTLE ROCK, ARK.

Work of construction has not yet commenced at this post under the acts of Congress approved April 23 and August 5, 1892, but plans of the post water supply and sewer systems and the necessary buildings therefor are in course of preparation.

PRESIDIO OF SAN FRANCISCO, CAL.

During the year the following work at this post and on the reservation connected therewith has been authorized:

One double barrack (brick and stone)	\$33, 900. 00
Plumbing in same	2, 275. 00
Gas piping in same	175. 00

Total	36, 350. 00
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The cost of construction of the building proper is chargeable to the appropriation for military posts.

TREES, SHRUBBERY, AND TREE CULTURE.

Cultivation of young trees has been continued during the year, and the trees generally are in a satisfactory condition. Considerable labor has been necessary to keep the younger trees from being choked by lupine, and to remove weeds, grass, and thistles.

During February and March, 1894, there were set out, from nursery stock raised on reservation, 11,540 eucalyptus and 8,890 cypress trees, to replace trees of previous plantings that had died. The work was done by day's labor at a cost of \$303.67. Indications are that nearly all of these trees will live, great care having been exercised in their removal from the nursery and planting, and frequent rains having fallen since.

Under authority of telegram from this office of February 23 last, award was made for furnishing trees and planting them on the sand spit in the southwest corner of the reservation, at \$70 per thousand. The trees were duly planted, and under the terms of the agreement the contractor guarantees the growth of 13,000 of them until next winter's rains commence.

FENCES, GATEWAYS, AND ROADS.

During the year repairs have been made from time to time as needed to fences inclosing young trees, the work being done by day's labor. Weeds and grass have been removed from roads and walks, and thistles cut when occasion required.

In the winter of 1892-'93 Lombard street at its intersection with Pierce street was badly washed out by rains. Lombard street having been macadamized between the Presidio and Van Ness avenue by the Government, on the pledge of the city authorities that the street would be kept in good order, the attention of the board of supervisors of this city and county was called to the damaged and dangerous condition of the street. The board, by resolution dated January 25, 1893, directed the superintendent of streets to compel the property owners to repair the damage, but the orders have never been carried out, although the attention of the board has since been called three times to the matter and replies received that the street superintendent had been directed to have the repairs done in accordance with the resolution. Last winter's rains further increased the damage, and that part of the street is now almost entirely gone, of which fact the board of supervisors has been notified.

WATER SUPPLY.

An expenditure of \$75 was authorized for necessary repairs to pump in connection with water supply of the cemetery, including its conversion from a 5 to a 4 inch pump, and the work was satisfactorily performed.

Expenditures during the year from the appropriation of \$10,000 provided in act of August 5, 1892, have been as follows:

For labor in cultivating, planting, and watering trees, repairing fences, preparing nursery, etc	\$1, 110. 45
Purchase of seeds for nursery	15. 00
Repairing pump of water supply	75. 00
First payment of W. H. Greene, for furnishing, planting, and guaranteeing growth of trees on sand spit	455. 00
Pay of draftsman preparing plans for improvements	75. 00
Purchase of blue-print paper for plans	8. 45
Total expenditures	1, 738. 90
Expenditures previously reported	5, 580. 44
Balance on hand June 30, 1894 .....	. 66
Total funds received from the appropriation	7, 320. 00
Balance not drawn from Treasury	2, 680. 00
Amount of appropriation	10, 000. 00

From appropriation for Army transportation there has been authorized during the year \$256 for cleaning ditches and repairing flume that drains the Presidio marsh. Of this sum there has been expended from time to time for necessary labor and material \$251.34.

Authority was given on September 14, 1893, for extension of the drainage flume seaward at a cost of \$700, and award was made and the work satisfactorily performed at a cost of \$690 appropriation "Army transportation."

Expenditures authorized for roads, walks, grading, bridges, wharves, etc., chargeable to the appropriation for Army transportation.

Post.	Roads, walks, grad- ing, bridges, etc.	Wharves.	Miscel- laneous.
Fort Adams, R. I	\$270. 00		
Anastasia Island, Fla			\$376. 50
Fort Barrancas, Fla		\$110. 00	198. 00
Fort Columbus, N. Y	695. 00		
Governors Island, N. Y	24. 00		
Fort Ethan Allen, Vt.	21, 490. 40		140. 00
Fort Hamilton, N. Y	971. 57	15. 70	
Jackson barracks, La	135. 00		
Key West barracks, Fla			418. 70
Fort Macomb, La			27. 00
Fort McHenry, Md	30. 80	3, 379. 03	
Fort McPherson, Ga	1, 662. 25		57. 75
Madison barracks, N. Y	2, 886. 18		225. 00
Fort Monroe, Va	854. 00		1, 264. 00
Fort Myer, Va	6, 750. 05		
Fort Niagara, N. Y	846. 79		
Plattsburg barracks, N. Y	13, 252. 23		500. 00
Fort Porter, N. Y	150. 00		
Fort Preble, Me	238. 50		
Fort Pulaski, Ga		114. 25	26. 65
St. Francis barracks, Fla	166. 50		
Fort Schuyler, N. Y	634. 00	165. 06	
Fort Thomas, Ky	12, 131. 00		
Fort Trumbull, Conn	540. 00		
Fort Wadsworth, N. Y	29. 00	75. 00	
Fort Warren, Mass	8. 60		
Washington barracks, D. C.	124. 00	1, 632. 00	981. 00
Fort Brady, Mich	222. 75		
Fort Leavenworth, Kans	1, 080. 00		
Fort Mackinac, Mich	3. 50		
Fort Riley, Kans	3, 137. 00		162. 00
Fort Sheridan, Ill	5, 390. 86	809. 50	759. 80
Fort Wayne, Mich	5, 484. 62		32. 43
Fort Crook, Nebr	500. 00		120. 00
Fort D. A. Russell, Wyo	44. 50		2. 00
Fort McKinney, Wyo	2. 75		
Fort Omaha, Nebr	150. 00		
Omaha Depot, Nebr	730. 31		
Fort Robinson, Nebr	10. 00		4. 50
Fort Sidney, Nebr	13. 90		
Fort Washakie, Wyo	48. 00		
Fort Custer, Mont	24. 00		
Fort Harrison, Mont	8, 914. 00		
Fort Keogh, Mont	775. 00		
Fort Meade, S. Dak	107. 95		
Fort Missoula, Mont	41. 00		
Fort Pembina, N. Dak	37. 50		
Fort Snelling Ordnance Depot	577. 28		
Fort Sully, S. Dak	16. 06		
Fort Yates, N. Dak	715. 80		
Fort Bliss, Tex	915. 00		
Fort Clark, Tex	325. 00		
Camp Eagle Pass, Tex	210. 00		
Fort McIntosh, Tex	66. 00		
San Antonio, Tex	9. 21		
Fort Douglas, Utah	61. 50		
Fort Du Chesne, Utah	333. 50		
Fort Huachuca, Ariz	183. 73		
Fort Logan, Colo	1, 477. 35		
Fort Stanton, N. Mex	392. 00		
Fort Canby, Wash		2. 50	
Fort Sherman, Idaho			154. 13
Fort Spokane, Wash	210. 54		
Fort Townsend, Wash		36. 60	
Vancouver barracks, Wash	302. 00		
Angel Island, Cal	14. 08		
Presidio of San Francisco, Cal	9, 865. 00		
Columbus barracks, Ohio	480. 00		
David's Island, N. Y	15. 00	596. 00	
Jefferson barracks, Mo	4, 130. 80		350. 00
Willels Point, N. Y	65. 00	122. 00	3, 450. 00
Jeffersonville Depot, Ind	65. 00		87. 40
Philadelphia Depot, Pa			311. 00
Hot Springs Army and Navy Hospital, Ark			41. 00
Total	111, 037. 36	7, 057. 70	9, 668. 86

“For shelter, shooting galleries, ranges, repairs, and expenses incident thereto,” Congress provided \$8,000 in the act making appropriations for the support of the Army, February 27, 1893. This sum has been apportioned as follows:

Department or station.	Character of work.	Amount.
Department of the East	Repairs, flour, etc.....	\$763. 03
Department of the Missouri.....	do	1, 595. 94
Department of the Platte.....	do	736. 89
Department of Dakota.....	do	382. 29
Department of Texas.....	do	570. 13
Department of Columbia	do	698. 97
Department of California.....	do	1, 448. 86
Department of Colorado.....	do	1, 343. 93
Fort Niagara, N. Y.....	Hire of two riding horses.....	44. 00
Fort McIntosh, Tex.....	Rent of range.....	80. 67
Fort Sheridan, Ill.....	Seeding range	21. 00
Fort Bliss, Tex.....	Repair of target butts.....	69. 20
Fort McIntosh, Tex.....	Construction of range	25. 00
Bellevue, Nebr.....	Paints for use on range.....	1. 70
West Point, N. Y.....	Repairs to rifle range.....	69. 40
Madison barracks, N. Y.....	Fitting up range.....	102. 75
Monroe, Mich.....	do	30. 00
Balance, June 30, 1894.....	.....	28. 24
Total .....	.....	8, 000. 00

HOSPITALS.

In the act making appropriations for the support of the Army for the fiscal year ending June 30, 1894, Congress appropriated \$50,000 for construction and repairs of hospitals at military posts already established and occupied, including the extra-duty pay of enlisted men employed on the same. This fund has been disbursed by officers of the Quartermaster's Department on estimates approved by the Surgeon-General of the Army, as follows:

Department and post.	Amount.	Department and post.	Amount.
<i>Department of the East.</i>		<i>Department of the Missouri.</i>	
Fort Adams	\$154. 00	Fort Brady	\$410. 50
Fort Barrancas	40. 00	Fort Leavenworth.....	218. 55
Fort Columbus	2, 208. 48	Fort Mackinac.....	68. 80
Fort Hamilton.....	592. 63	Fort Reno	112. 00
Jackson barracks	331. 00	Fort Riley	400. 00
Key West barracks.....	52. 90	Fort Sheridan	2, 639. 23
Madison Barracks	105. 14	Fort Sill	349. 16
Fort McHenry.....	151. 27	Fort Supply	1, 500. 00
Fort McPherson.....	111. 50	Total	5, 698. 24
Fort Monroe.....	211. 00	<i>Department of the Platte.</i>	
Mount Vernon barracks	250. 03		
Fort Myer	31. 68		
Newport barracks.....	47. 00		
Fort Niagara.....	217. 25	Fort D. A. Russell	288. 64
Fort Ontario.....	560. 29	Fort McKinney.....	345. 82
Plattsburg barracks	13. 69	Fort Niobrara	153. 25
Fort Porter.....	300. 00	Fort Robinson.....	343. 97
Fort Preble.....	224. 80	Fort Sidney	59. 94
St. Francis barracks	678. 79	Fort Washakie	354. 23
Fort Schuyler	474. 64	Total	1, 545. 85
Fort Thomas	253. 03	<i>Department of Dakota.</i>	
Fort Trumbull.....	250. 00		
Fort Wadsworth.....	421. 75	Fort Buford	392. 24
Washington barracks.....	20, 253. 88	Fort Custer.....	126. 07
Fort Wood.....	345. 60	Camp Merritt	17. 48
Total	28, 280. 35	Fort Missoula	15. 75

Department and post.	Amount.	Department and post.	Amount.
<i>Department of Dakota—Continued.</i>		<i>Department of California—Cont'd.</i>	
Fort Pembina.....	\$46.34	Fort Bidwell.....	\$6.40
Fort Snelling.....	480.60	Fort Mason.....	100.00
Fort Sully.....	267.67	Presidio of San Francisco.....	287.49
Fort Yates.....	274.48	San Diego barracks.....	9.50
Total.....	1,620.63	Total.....	983.51
<i>Department of Texas.</i>		<i>Department of the Colorado.</i>	
Fort Brown.....	14.60	Fort Bayard.....	236.88
Fort Clark.....	450.00	Fort Douglas.....	810.40
Camp Eagle Pass.....	141.21	Fort DuChesne.....	101.93
Fort Hancock.....	72.66	Fort Grant.....	680.00
Fort McIntosh.....	299.99	Fort Huachuca.....	419.93
Fort Ringgold.....	460.75	Fort Logan.....	283.69
Fort Sam Houston.....	991.53	Fort Marcy.....	98.50
Total.....	2,430.74	San Carlos.....	36.95
<i>Department of the Columbia.</i>		Fort Stanton.....	475.10
Boise barracks.....	31.50	Whipple barracks.....	39.60
Fort Sherman.....	225.00	Fort Wingate.....	361.65
Fort Spokane.....	19.30	Total.....	3,544.63
Fort Townsend.....	10.00	<i>Independent posts, etc.</i>	
Vancouver barracks.....	322.34	Columbus barracks.....	396.00
Fort Walla Walla.....	396.07	Army and Navy General Hospital...	1,958.05
Total.....	1,004.21	Jefferson barracks.....	2,006.01
<i>Department of California.</i>		Willets Point.....	299.12
Alcatraz Island.....	403.02	Total.....	4,659.18
Angel Island.....	177.10	Balance June 30, 1891.....	282.66
		Grand total.....	50,000.00

HOSPITAL STEWARDS' QUARTERS.

In the army appropriation act for the fiscal year ending June 30, 1894, Congress also appropriated \$7,000 for construction of quarters for hospital stewards at military posts already established and occupied, including the extra-duty pay of enlisted men employed on the same. This sum has been apportioned to the posts named below:

Post.	Amount.	Post.	Amount.
Fort Adams.....	\$29.00	Fort Robinson.....	\$50.00
Fort Barrancas.....	40.00	Fort Bayard.....	67.41
Fort Columbus.....	83.50	Fort Grant.....	88.65
Jackson barracks.....	403.50	San Carlos.....	792.81
Fort McHenry.....	9.00	Fort DuChesne.....	28.13
Fort McPherson.....	22.00	Fort Sully.....	66.30
Mount Vernon barracks.....	63.83	Fort Yates.....	12.52
Fort Niagara.....	17.13	Fort Yellowstone.....	1,971.85
Fort Ontario.....	49.60	Fort Hancock.....	30.25
Fort Porter.....	17.25	Presidio of San Francisco.....	12.75
Fort Preble.....	48.23	Columbus barracks.....	24.90
Fort Schuyler.....	45.00	Davids Island.....	75.00
Washington barracks.....	40.15	Jefferson barracks.....	2,235.00
Fort Brady.....	22.00	Balance June 30, 1891.....	44.24
Fort Reno.....	875.00	Total.....	7,000.00
Fort Riley.....	75.00		
Fort Sill.....	140.00		

BOX LOCKERS.

During the year contracts for the manufacture and painting of 1,800 box lockers from material on hand at the Jeffersonville depot, purchased at a cost of \$2,000 in the preceding year, have been made, amounting to \$674.20; the cost of each locker manufactured being about \$1.48½.

IRON FLAGSTAFFS.

Contract for the manufacture of 6 iron flagstaffs, after plans and specifications prepared in this office, has been entered into by the depot quartermaster at St. Louis, Mo., for issue to military posts as required, at a cost of \$566.66 each. These flagstaffs are 100 feet in height.

BRIDGES.

By act of Congress approved May 7, 1894, an appropriation of \$7,000 was made for reconstruction of a substantial wooden or iron Government bridge across the Niobrara River near the village of Niobrara, Nebr., destroyed by floods.

Plans of this bridge are being prepared by the chief quartermaster, Department of the Platte, and the work will be done under contract.

Losses by fire.

Post.	Building.	Remarks.
Fort Adams, R. I	Officers' quarters, No. 11.....	Cost of repairs, about \$945.
Fort Barrancas, Fla.....	Noncommissioned staff officers' quarters, No. 27.	Destroyed.
Fort Monroe, Va.....	Officers' quarters, No. 70.....	Cost of repairs, \$150. 57.
Fort Niagara, N. Y	Building, No. 23, used for shops, etc.....	About half destroyed.
	Coal shed	Building of no value destroyed.
Fort Brady, Mich	Mess hall, etc., No. 12.....	Floor charred under range.
Fort Leavenworth, Kans.....	Double set officers' quarters, No. 12.....	Badly damaged; building since demolished.
	Officers' quarters, No. 19, C	Dining room slightly damaged.
Fort Reno, Okla	Band barracks, No. 22	Destroyed.
	Post exchange, No. 65.....	Do.
Fort Riley, Kans	Post exchange, No. 116	Cost of repairs, about \$351.
	Officers' quarters, No. 11.....	Cost of repairs, \$187.72.
Fort Supply, Okla	Bakery, No. 21	Roof, etc., damaged.
Fort Omaha, Nebr	Gymnasium, No. 46	Very slightly damaged.
	Post exchange, No. 36.....	Damaged about \$300.
Fort Keogh, Mont.....	Sawmill, No. 82	Destroyed.
Fort Snelling, Minn.....	Old corral, No. 2, F.....	Stone walls left standing; loss about \$2,000.
	Hay house and granary, No. 11, F.....	Destroyed.
Fort Bayard, N. Mex.....	Two stables, Nos. 29 and 30.....	Do.
Fort Logan, Colo.....	Guardhouse	Destroyed, except walls.
	Officers' quarters, No. 10.....	Very slightly damaged.
Fort Stanton, N. Mex	Mechanics' quarters, No. 28½.....	Do.
Fort Wingate, N. Mex	Ice house	Destroyed.
Columbus barracks, Ohio	Adjutant's office, No. 39.....	Slightly damaged.
Jefferson barracks, Mo.....	Laundry, etc., No. 28	Destroyed.
	Blacksmith shop, No. 27	Do.
	Three small buildings used as noncommissioned officers' quarters	Do.
	Post quartermaster sergeant's quarters, No. 27½.	Exterior scorched.
	Hospital.....	Cost of repairs, about \$258.
	Quartermaster and subsistence storehouse and offices, No. 9.	Badly damaged; south wing destroyed.

A statement is herewith submitted, marked A, of property rented by the Quartermaster's Department during the fiscal year and the amount of rent paid therefor.

Very respectfully,

C. P. MILLER,

Captain and Assistant Quartermaster, U. S. Army.

The QUARTERMASTER-GENERAL, U. S. ARMY,

Washington, D. C.

A.—Statement showing property rented by the Quartermaster's Department during the fiscal year ending June 30, 1894, and total amount paid, as shown by reports of officers of the department.

DEPARTMENT OF THE EAST.

Post or station.	Number of rooms.	Purpose for which used.	Monthly rate of rent.	Total amount for year.
Baltimore, Md	Building.....	Office, quartermaster and subsistence departments.	{ \$50.00 } 83.33	\$799.98
Boston, Mass	8	Offices and storerooms, quartermaster and subsistence departments.	90.00	1,080.00
Buffalo, N. Y.....	3	Office of depot quartermaster.....	62.50	750.00
New Orleans, La.....	5 months ..4	Office and storerooms, quartermaster and subsistence departments.	60.00	800.00
Providence, R. I	7 months ..6	Office, inspector of ordnance	80.00	800.00
Atlanta, Ga.....	1	Office of paymaster	25.00	300.00
Southport, N. C.....	2	Office of quartermaster	25.00	300.00
Sacketts Harbor, N. Y..	1	Ordnance-sergeants quarters	8.00	96.00
	1	Office, constructing quartermaster, Madison barracks.	15.00	180.00
	Building.....	Stable and shed for public animals and wagon.	7.00	84.00
Cincinnati, Ohio.....	3	Offices, constructing quartermaster, Fort Thomas, Ky.	35.00	420.00
Newport, Ky		Stable accommodations for public horses.	10.00	120.00
Fort Ethan Allen, Vt...	2	Office, constructing quartermaster.....	7.50	67.50
Burlington, Vt.....	1	do.....	12.50	150.00
	Building.....	Stable for public animals	12.00	96.00
Total				5,608.48

DEPARTMENT OF THE MISSOURI.

Chicago, Ill.....	29	Offices, headquarters department	{ \$1,328.33 } 1,000.00	\$13,969.98
	Building.....	Office, subsistence depot, and storehouse for subsistence and quartermaster's departments.	500.00	5,880.00
	do	Stable for animals, quartermaster's department.	480.00	
	2	Quarters for enlisted men, quartermaster's department.	150.00	1,800.00
	12	Quarters for enlisted men, ordnance department.	12.00	108.00
	6	Quarters for enlisted men, signal department.	12.00	782.80
	16	Quarters for enlisted men, Engineer Corps.	12.00	426.40
	7	Quarters for enlisted men, hospital corps.	12.00	828.00
	1	Quarters for enlisted men, First Artillery.	12.00	414.80
Kansas City, Mo.....	2	Office for subsistence department.....	50.00	50.40
Leavenworth, Kans.....	1	Office for pay department.....	25.00	600.00
Antlers, Ind. T	1	Hospital accommodations.....	5.00	300.00
Fort Wayne, Mich.....		Camp ground for troops en route to rifle camps and return, 2 trips, \$125 and \$80.		17.50
Fort Riley, Kans.....	1	Quarters for enlisted men, Seventh Cavalry.		205.00
Fort Sheridan, Ill.....	4	Office, constructing quartermaster.....	20.00	3.00
	1	Quarters for enlisted men of general service.		240.00
Little Rock, Ark.....	1	Office	4.00	8.25
	Building.....	Two stalls for public animals, vehicles, and forage.	5.00	22.85
Detroit, Mich.....	do	Office and drafting rooms, and for storage of United States property for constructing quartermaster, Fort Wayne, Mich.	30.00	8.00
Total				25,702.98

A.—Statement showing property rented by the Quartermaster's Department during the fiscal year ending June 30, 1894, and total amount paid, as shown by reports of officers of the department—Continued.

DEPARTMENT OF THE PLATTE.

Post or station.	Number of rooms.	Purpose for which used.	Monthly rate of rent.	Total amount for year.
Omaha, Nebr	41	Office for department headquarters .. {	\$666.67	\$8,226.67
	1	Quarters for commissary sergeant.....	780.00	
Ogden, Utah	2	Offices and storeroom, quartermaster's agent.	12.00	100.40
			32.00	384.00
Total				8,711.07

DEPARTMENT OF DAKOTA.

Helena, Mont	2	Offices, quartermaster's department	\$45.00	\$517.23
	5	.....do	50.00	320.00
	8	Stable, quartermaster's department	10.00	120.00
	Grounds.....	Camp for U. S. troops		25.00
Lake City	do	do		25.00
	do	do		30.00
		Lodgings for enlisted men.....		105.61
Total				1,142.83

DEPARTMENT OF TEXAS.

San Antonio, Tex.....	1	Office for paymaster	\$35.00	\$87.50
	1	Quarters for commissary sergeant.....	12.00	144.00
	2	Quarters, 2 principal musicians.....	24.00	144.00
	2	Quarters for post and regimental quartermaster sergeants.	24.00	144.00
	1	Quarters for commissary sergeant.....	12.00	138.00
	1	Quarters, chief musician.....	12.00	138.00
	1	Quarters, sergeant major.....	12.00	138.00
	1	Quarters, ordnance sergeant	12.00	138.00
	1	Quarters, 1 signal sergeant.....	12.00	144.00
	1	do	12.00	82.80
	1	do	12.00	82.00
Fort Bliss (old post)....	18	Quarters, for officers, enlisted men and storehouses.	175.00	1,925.00
Eagle Pass, Tex	Grounds.....	Camp for 1 troop of cavalry.....	75.00	507.50
Edinburg, Tex.....	Building and grounds.	Quarters and storeroom for a detachment.	15.00	180.00
Santa Maria, Tex	do	do		150.00
Pena, Tex	1	Office for quartermaster agent.....	8.00	96.00
Laredo, Tex	1	Quarters, chief musician	7.50	85.50
	1	Quarters, veterinary surgeon.....	12.00	136.80
	1	Quarters, signal sergeant	12.00	60.00
Carrizo, Tex	1	do	12.00	75.20
San Ygnacio, Tex.....	1	do	12.00	69.20
Havana Ranch, Tex	1	Telegraph office.....		10.50
El Paso, Tex.....	2	Office and drafting rooms, constructing quartermaster, New Fort Bliss.	30.00	285.00
		Stable, constructing quartermaster, New Fort Bliss.	7.50	71.25
Total				5,032.25

A.—Statement showing property rented by the Quartermaster's Department, etc.—Cont'd.

DEPARTMENT OF CALIFORNIA.

Post or station.	Number of rooms.	Purpose for which used.	Monthly rate of rent.	Total amount for year.
San Francisco	1 floor	Offices for department headquarters....	\$750.00	\$9,000.00
		Stabling for public animals, etc	47.00	564.00
	1	Quarters, signal sergeant.....	12.00	144.00
	1	.....do	12.00	84.00
Los Angeles.....	1	Office, purchasing commissary subsistence.	30.00	330.00
	1	Office, inspector-general	30.00	210.00
	1	Office, signal officer.....	10.00	60.00
	1	Quarters, sergeant signal corps.....	12.00	72.00
San Diego	Building.....	Post hospital	75.00	900.00
	15	Officers' quarters	12.00	1,260.00
	13	.....do	12.00	468.00
	12	.....do	12.00	144.00
	11	.....do	12.00	132.00
	4	.....do	12.00	22.40
	3	.....do	12.00	19.20
	3	.....do	12.00	2.40
	2	.....do	12.00	13.60
Total				13,425.60

DEPARTMENT OF THE COLORADO.

Albuquerque, N. Mex....	1	Offices for paymasters	\$25.00	\$211.67
Benson, Ariz.....		Lodgings for 10 recruits		5.00
Carthage, N. Mex	1	Quarters for signal sergeant.....	12.00	144.00
Cooleys, Ariz	1	.....do	12.00	144.00
Deming, N. Mex		Lodgings for 2 recruits		1.00
Denver, Colo.....	46	Headquarters Department of Colorado ..	666.68	7,333.26
	5	Offices, quartermaster and subsistence departments.	125.00	250.00
		Stabling public animals	2.50	7.50
		Building temporarily occupied by 5 companies Seventh Infantry.	600.00	60.00
	Building.....	Stable, quartermaster department.....	50.00	551.65
	2	Quarters, signal sergeant.....	24.00	213.20
Holbrook, Ariz.....	1	.....do	12.00	144.00
Los Angeles, Cal.....	49	Headquarters Department of Colorado..	635.00	677.33
	Building.....	Stable, quartermaster department	30.00	30.00
	1	Storeroom, quartermaster department ..	15.00	15.00
	2	Office, paymaster	35.00	87.50
	1	Quarters, commissary sergeant	12.00	18.00
Fort Marcy, N. Mex ...	2	Offices, paymasters	20.00	240.00
	1	Quarters, chief musician	9.00	108.00
	1	Quarters, principal musician	10.00	120.00
	1	.....do	7.00	92.07
	1	.....do	12.00	
	1	Quarters, commissary sergeant	10.00	120.00
	1	Quarters, sergeant major	11.00	132.00
	1	Quarters, regimental quartermaster sergeant	9.00	108.00
Prince, Utah.....	1	Lodgings for recruits.....	4.00	48.00
	Building.....	Quartermaster warehouse.....	20.00	240.00
Salt Lake City, Utah...	1	Offices, paymaster	30.00	90.00
Taylor's Ranch, Utah...	1	Quarters, signal sergeant	10.00	120.00
Willcox, Ariz.....		Lodgings for recruits.....		7.50
	1	Quarters, signal sergeant.....	12.00	138.00
	1	.....do	10.00	10.00
Total				11,466.68

DEPARTMENT OF THE COLUMBIA.

Portland, Oreg.....	6	Offices, chief paymaster and depot quartermaster.	\$77.00	\$924.00
	1	Storeroom.....	15.00	15.00
Walla Walla, Wash....	1	Office, paymaster.....	30.00	360.00
Fort Spokane, Wash....		Lodgings for enlisted men		37.50
Fort Sherman, Idaho ..		.....do		47.50
Vancouver barracks, Wash.		.....do		2.00
Total				1,386.00

A.— Statement showing property rented by the Quartermaster's Department, etc.—Cont'd.

GENERAL DEPOTS OF THE QUARTERMASTER'S DEPARTMENT.

Post or station.	Number of rooms.	Purpose for which used.	Monthly rate of rent.	Total amount for year.
New York depot.....	1	Quarters for hospital steward	\$14. 00	\$164. 73
	Building.....	Stable and carriage house for public animals, etc.	112. 50	1, 350. 00
Total				1, 514. 73
Philadelphia depot.....	14	Offices, storerooms, etc.....	179. 17	2, 150. 04
	1	Office, attending surgeon	18. 00	192. 00
			15. 00	
Total				2, 342. 04
Washington depot.....	Ground.....	Stables, etc.....	150. 00	1, 800. 00
	do	Offices, storerooms, etc., for subsistence department.	8. 33½	100. 00
	do	do	25. 00	300. 00
	1	Quarters for hospital steward	21. 00	252. 00
	3	Quarters, 3 signal sergeants.....	36. 00	432. 00
	1	Quarters, hospital steward.....	12. 00	94. 00
	1	Quarters, private hospital corps.....	12. 00	89. 60
	1	Quarters, hospital steward	12. 00	86. 40
		Office for military attaché, Paris, France.....		165. 00
		Office for military attaché, Berlin, Ger- many.		360. 00
		Office for military attaché, St. Peters- burg, Russia.		403. 20
		Office for military attaché, London, England.		144. 00
		Office for military attaché, Rome, Italy		225. 00
		Office for military attaché, Vienna, Austria.		72. 00
		Office for military attaché, Madrid, Spain.		70. 49
Total				4, 593. 69
St. Louis depot.....	9	Offices and storeroom quartermaster's department.	216. 67	216. 67
	3	Offices subsistence department.....	100. 00	200. 00
	Building.....	Stable quartermaster's department.....	30. 00	240. 00
	do	Storehouse and office medical depart- ment.	166. 67	2, 000. 04
Total				2, 656. 71
San Francisco depot....	Building.....	Offices and storerooms medical, subsis- tence, and quartermaster's depart- ments.	833. 33	9, 999. 96
		Quartermaster's storerooms.....	125. 00	1, 500. 00
		Storage for turpentine and oils, per gal- lon, \$0. 00½; per barrel, \$0.15.		946. 01
		Storage room for medical supplies	35. 00	70. 00
	1	Quarters for commissary sergeant.....	12. 00	34. 80
Total				12, 550. 77

RECAPITULATION.

Department, etc.	Amount.
Department of the East.....	\$5, 603. 48
Department of the Missouri	25, 702. 98
Department of the Platte	8, 711. 07
Department of Dakota.....	1, 142. 88
Department of Texas	5, 032. 25
Department of California	13, 425. 60
Department of the Colorado	11, 466. 68
Department of the Columbia.....	1, 386. 00
New York depot	1, 514. 73
Philadelphia depot.....	2, 342. 04
Washington depot	4, 593. 69
St. Louis depot	2, 656. 71
San Francisco depot.....	12, 550. 77
Total.....	96, 128. 83

WAR DEPARTMENT,
QUARTERMASTER-GENERAL'S OFFICE,
Washington, D. C., July 21, 1894.

GENERAL: I have the honor to submit a report of the operations of the reservation branch of this office for the fiscal year ending June 30, 1894.

The sale of land at Pittsburg, Pa., authorized by act of May 21, 1890 (Public 125), has not been accomplished. The depot quartermaster, Washington, D. C., advertised it for sale at public auction, but no satisfactory offer being made, the land was withdrawn.

A site for a military post has been purchased at Eagle Pass, Tex. (old Fort Duncan), under the provisions of the act of March 3, 1891. The title papers were submitted to the Attorney-General, who rendered favorable opinion thereon, December 11, 1893. The site embraces 155.34 acres. Jurisdiction was ceded by State acts of 1849 and 1871, and also by governor's deed of March 31, 1894.

January 24, 1894, the \$20,000 specifically appropriated by Congress for the purchase was paid by the department chief quartermaster to the clerk of the circuit court of the western district of Texas under an amended decree of that court.

The appropriation of \$16,500 by act of June 27, 1890 (General Order 69 of 1890), for purchase of land for target ranges at Fort McPherson, Ga., still remains unexpended, suitable ground not having been acquired in the vicinity of the post.

Under terms of act approved July 8, 1886 (General Order 52 of 1886), the grounds comprising Old Fort Brady, Mich., authorized to be sold, have been duly platted, appraised, etc., and under public advertisement the 31 buildings and 3 lots of old fencing located thereon were sold at auction October 25, 1893, under the direction of Capt. George S. Hoyt, assistant quartermaster, for the sum of \$2,072.50. Since October 24, 1893, 17 lots have been sold at public and private sale (at not less than appraised value), the total amount realized being \$18,920.95, and the proceeds (subject to deduction of cost attending sales) have been deposited in the Treasury. The unsold lots are in charge of the post quartermaster, Fort Brady, Mich., to whom application for purchase is made.

Under act approved March 1, 1890, the military reservation of Old Fort Bliss, Tex., was platted, appraised, and advertised to be sold March 5, 1894, but the sale was postponed pending action upon certain bills then before Congress.

Under the act approved July 28, 1892 (General Order 56, 1892, Adjutant-General's Office), the Secretary of War, December 30, 1893, granted a lease for five years, and revocable at any time, to the Westinghouse Electric and Manufacturing Company, of a portion of the Government property at Pittsburg, Pa. Payments are made quarterly to the acting assistant quartermaster at Allegheny Arsenal at the rate of \$900 per year and the money deposited in the Treasury to the credit of miscellaneous receipts. Under conditions of lease, the premises may be vacated on sixty days' notice from either party, and restored by lessee to same condition as when received—ordinary wear and tear excepted.

The post of Old Fort Union, N. Mex., having been abandoned in 1891, the site not belonging to the United States, and the old adobe buildings possessing no value, the Secretary of War directed the transfer of the reservation and buildings to the owners of the land. In case they declined to receive it after due notification, the premises were ordered to be entirely abandoned. The heirs of the late B. F. Butler

having large interests therein, and representing the other owners, the administrators were duly communicated with at Lowell, Mass., but failing to appear in person or by representative to receive the same at the designated time, April 1, 1894, the premises were totally abandoned by the Government.

The general orders affecting military reservations published during the fiscal year are as follows:

General Order 55, 1893, authorizing withdrawal of garrison from Camp Poplar River, Mont., and abandonment of post. Buildings turned over intact to Interior Department for Indian school purposes.

General Order 58, 1893, announcing boundaries of the following reservations: Fort Marion, Fla.; St. Francis barracks, Fla.; Fort McRee, Fla.; Fort Clinch, Fla.

General Order 68, 1893, announcing boundaries of the reservation on Anastasia Island, Fla.

General Order 69, 1893, authorizing withdrawal of garrison from Fort Bidwell, Cal., and abandonment of post.

General Order 84, 1893, announcing transfer of the Fort Randall, S. Dak., reservation to the Interior Department.

General Order 11, 1894, publishing the President's proclamation of April 6, 1894, transferring to the city of El Paso, under act of March 3, 1893, the site of the old Fort Bliss cemetery, Texas, for park and other public uses.

The Secretary of War's orders of May 15, 1894, direct the transfer to the Judge-Advocate-General's office of—

A. All original deeds and papers pertaining to the title, or any lease, grant, license, or easement of, upon, or over any military reservation and all other lands owned by the United States under the jurisdiction of the War Department.

B. Record books of deeds, opinions of Attorney-General and of the solicitor of the War Department in the office of the Secretary of War.

C. All papers pertaining to the sale of military reservations or public lands under the jurisdiction of the War Department.

The transfer of these papers, etc., has been made.

Cession of jurisdiction has been obtained during the year as follows:

Fort Barrancas, Fla., governor's deed, September 4, 1893.

Fort Clinch, Fla., governor's deed, September 4, 1893.

Fort Marion, Fla., governor's deed, September 4, 1893.

St. Francis barracks, Fla., governor's deed, September 4, 1893.

Two islands in Mantanzas River, Florida, governor's deed, September 4, 1893.

Anastasia Island, Florida, governor's deed, September 4, 1893.

Eagle Pass, Tex., governor's deed, March 31, 1894.

Custodians are employed and paid by this department for the care of the reservations of—

	Per month.
Old Fort Bliss, Tex., A. G. Mallory.....	\$60. 00
Fort Sidney, Nebr., William Stuht.....	50. 00

At Monterey, Cal., Francis Doud has been custodian for several years without pay.

Statements A, B, C, and D are appended.

Very respectfully,

OSCAR F. LONG,

Captain and Assistant Quartermaster, U. S. Army.

The QUARTERMASTER-GENERAL, U. S. ARMY.

A.—Expenditures authorized for repairs to water, sewerage, and plumbing systems, chargeable to the appropriation for Army transportation for 1893-'94.

Station.	Amount.	Station.	Amount.
<i>Department of the East.</i>		<i>Department of Texas.</i>	
Adams, Fort, R. I.	\$900. 70	Bliss, Fort Tex.	\$1, 218. 60
Barrancas, Fort, Fla.	1, 049. 27	Brown, Fort, Tex.	1, 096. 69
Constitution, Fort, N. H.	3. 30	Clark, Fort, Tex.	262. 25
Ethan Allen, Fort, Vt.	16, 310. 10	Eagle Pass, Tex.	20. 00
Foot, Fort, Md.	109. 10	Hancock, Fort, Tex.	449. 55
Governors Island, New York Harbor.	2, 971. 25	McIntosh, Fort, Tex.	3, 956. 71
Hamilton, Fort, New York Harbor.	785. 00	Kinggold, Fort, Tex.	940. 25
Jackson barracks, La.	514. 45	Sam Houston, Fort, Tex.	5, 984. 01
Key West barracks, Fla.	129. 15	San Antonio, Tex.	671. 54
Madison barracks, N. Y.	12, 682. 06	Total	14, 599. 60
McHenry, Fort, Md.	2, 009. 15	<i>Department of Dakota.</i>	
Myer, Fort, Va.	3, 270. 79	Assiniboine, Fort, Mont.	2, 499. 27
Monroe, Fort, Va.	7, 726. 58	Buford, Fort, N. Dak.	2, 728. 59
McPherson, Fort, Ga.	464. 15	Custer, Fort, Mont.	720. 88
Mt. Vernon barracks, Ala.	5, 744. 18	Harrison, Fort, Mont.	51, 098. 34
Niagara, Fort, N. Y.	4, 001. 36	Keogh, Fort, Mont.	1, 373. 06
Newport barracks, Ky.	48. 70	Meade, Fort, S. Dak.	10, 845. 27
Ontario, Fort, N. Y.	230. 94	Missoula, Fort, Mont.	712. 40
Porter, Fort, N. Y.	341. 30	Pembina, Fort, N. Dak.	2, 651. 71
Plattsburg barracks, N. Y.	12, 347. 91	Snelling, Fort, Minn.	1, 710. 00
Preble, Fort, Me.	381. 07	St. Paul, Minn.	89. 87
Schuyler, Fort, New York Harbor.	2, 992. 48	Sully, Fort, S. Dak.	936. 49
St. Francis barracks, Fla.	566. 67	Yates, Fort, N. Dak.	599. 53
Trumbull, Fort, Conn.	984. 83	Yellowstone, Fort, Wyo.	747. 85
Thomas, Fort, Ky.	9, 801. 65	Total	76, 213. 26
Warren, Fort, Mass.	3, 046. 27	<i>Department of the Colorado.</i>	
Wadsworth, Fort, New York Harbor.	412. 40	Apache, Fort, Ariz.	997. 00
Washington, Fort, Md.	42. 00	Bowie, Fort, Ariz.	150. 10
Washington barracks, D. C.	1, 416. 52	Bayard, Fort, N. Mex.	468. 69
Wood, Fort, N. Y. Harbor.	1, 114. 86	Douglas, Fort, Utah.	765. 70
Total	92, 398. 19	Du Chesne, Fort, Utah.	59. 50
<i>Department of the Missouri.</i>		Grant, Fort, Ariz.	1, 319. 42
Brady, Fort, Mich.	485. 23	Huachuca, Fort, Ariz.	785. 24
Leavenworth, Fort, Kans.	3, 692. 02	Logan, Fort, Colo.	11, 124. 10
Mackinac, Fort, Mich.	21. 65	Marcy, Fort, N. Mex.	289. 64
Reno, Fort, Okla.	2, 704. 21	San Carlos, Ariz.	1, 087. 66
Riley, Fort, Kans.	7, 413. 00	Stanton, Fort, N. Mex.	586. 06
Sheridan, Fort, Ill.	2, 435. 79	Whipple barracks, Ariz.	708. 55
Sill, Fort, Okla.	1, 363. 68	Wingate, Fort, N. Mex.	472. 22
Supply, Fort, Ind. T.	895. 34	Total	18, 813. 88
Wayne, Fort, Mich.	6, 122. 94	<i>Department of the Columbia.</i>	
Total	25, 133. 86	Boise barracks, Idaho.	799. 96
<i>Department of the Platte.</i>		Canby, Fort, Wash.	209. 10
Camp Pilot Butte, Wyo.	90. 00	Sherman, Fort, Idaho.	576. 87
Crook, Fort, Nebr.	1, 920. 54	Spokane, Fort, Wash.	1, 385. 67
D. A. Russell, Fort, Wyo.	1, 879. 81	Townsend, Fort, Wash.	201. 30
McKinney, Fort, Wyo.	332. 53	Vancouver barracks, Wash.	1, 655. 32
Niobrara, Fort, Nebr.	9, 839. 53	Walla Walla, Wash.	805. 06
Omaha, Nebr.	881. 60	Total	5, 633. 28
Robinson, Fort, Nebr.	1, 043. 18	<i>Independent posts.</i>	
Sidney, Fort, Nebr.	181. 08	Columbus barracks, Ohio.	4, 518. 29
Washakie, Fort, Wyo.	893. 04	Davids Island, New York Harbor.	1, 013. 51
Total	17, 061. 31	Jeffersonville Depot, Ind.	70. 50
<i>Department of California.</i>		Jefferson barracks, Mo.	6, 989. 01
Alcatraz Island, Cal.	241. 02	New York Depot.	15. 00
Angel Island, Cal.	2, 972. 25	Philadelphia Depot, Pa.	549. 07
Benicia barracks, Cal.	2, 344. 35	St. Louis Depot, Mo.	375. 14
Mason, Fort, Cal.	186. 83	West Point, N. Y.	114. 75
Presidio of San Francisco, Cal.	22, 115. 18	Willels Point, N. Y.	3, 164. 61
San Diego barracks, Cal.	54. 11	Total	16, 809. 88
Total	27, 913. 74	Aggregate	294, 577. 00

B.—Expenditures authorized for lighting, heating, etc., chargeable to the appropriation for regular supplies for 1893-'94.

Station.	Amount.	Station.	Amount.
Adams, Fort, R. I.....	\$114.36	Philadelphia, Depot, Pa.....	\$284.00
Bliss, Fort, Tex.....	494.00	Presidio of San Francisco, Cal.....	309.00
Brady, Fort, Mich.....	702.50	Reno, Fort, Okla.....	2,500.00
Columbus barracks, Ohio.....	10,456.70	Riley, Fort, Kans.....	4,263.26
Columbus, Fort, New York Harbor..	1,679.00	Ringgold, Fort, Tex.....	201.98
Crook, Fort, Nebr.....	7,059.16	Robinson, Fort, Nebr.....	2.75
Custer, Fort, Mont.....	151.43	Schuyler, Fort, New York Harbor..	340.62
D. A. Russell, Wyo.....	2,555.00	Sheridan, Fort, Ill.....	7,199.88
Davids Island, New York Harbor...	402.61	Sam Houston, Fort, Tex.....	326.00
Ethan Allen, Fort, Vt.....	14,352.67	San Antonio, Tex.....	194.73
Eagle Pass, Tex.....	806.70	San Carlos, Ariz.....	414.02
Hamilton, Fort, New York Harbor..	635.30	Snelling, Fort, Minn.....	74.78
Harrison, Fort, Mont.....	9,000.00	Sill, Fort, Okla.....	12.00
Hot Springs, Ark.....	5.00	Stanton, Fort, N. Mex.....	358.00
Jeffersonville Depot, Ind.....	133.15	Sully, Fort, S. Dak.....	226.00
Jefferson barracks, Mo.....	8,793.52	Supply, Fort, Ind. T.....	34.50
Keogh, Fort, Mont.....	421.70	St. Francis barracks, Fla.....	142.75
Key West barracks, Fla.....	3.85	St. Paul, Minn.....	66.60
Leavenworth, Fort, Kans.....	1,465.37	St. Louis, Mo.....	19.50
Logan, Fort, Colo.....	8,227.40	Thomas, Fort, Ky.....	15,017.47
Madison barracks, N. Y.....	12,369.42	Trumbull, Fort, Conn.....	2,145.20
McIntosh, Fort, Tex.....	100.00	Vancouver barracks, Wash.....	500.00
McPherson, Fort, Ga.....	93.57	Washington barracks, D. C.....	4,769.40
Monroe, Fort, Va.....	1,317.68	Wadsworth, Fort, New York Har-	
Mt. Vernon barracks, Ala.....	101.25	bor.....	491.40
Niagara, Fort, N. Y.....	1,462.93	Walla Walla, Fort, Wash.....	675.00
Niobrara, Fort, Nebr.....	1,952.00	Wayne, Fort, Mich.....	7,002.50
Omaha, Fort, Nebr.....	61.58	Willels Point, N. Y.....	2,667.64
Ontario, Fort, N. Y.....	18.75	Yates, Fort, N. Dak.....	62.85
Preble, Fort, Me.....	11.60		
Plattsburg barracks, N. Y.....	83,332.57	Total.....	108,606.15
Porter, Fort, N. Y.....	24.05		

C.—List of military reservations turned over by the War Department to the Interior Department, or otherwise disposed of by the War Department, from 1858 to June 30, 1894, with date of relinquishment, authority therefor, etc.

Name of post.	Date of relinquishment.	Authority for relinquishment.	Remarks.
Abercrombie, Fort, Dak.	Mar. 25, 1871	Act Feb. 24, 1871	Portion east of the Red River of the North. G. O. 19, A. G. O., 1871.
Do	July 14, 1880	Act June 10, 1880	Reservation abolished. G. O. 55, A. G. O., 1880.
Do .....	.....	Act July 15, 1882	Reservation abolished. G. O. 85, A. G. O., 1882.
Abraham Lincoln, Fort, N. Dak.	Oct. 15, 1891	Act July 5, 1884	15,040 acres, also Sibleys Island, containing 13,696 acres. G. O. 84, A. G. O., 1891.
Arbuckle, Fort, Ind. T.	July 9, 1870	Indian treaty of Apr. 28, 1866.	
Assinniboine, Fort, Mont.	Oct. 22, 1891	Act July 5, 1884	Hay reservation, coal reservation, and part of post reservation. Area not stated. G. O. 85, A. G. O., 1891.
Atkinson, Fort, Iowa .....	.....	Act June 7, 1860	12 Stats., 28.
Austin, Tex. ....	.....	Act Mar. 5, 1888	Arsenal block. For educational purposes only. G. O. 30, A. G. O., 1888.
Baton Rouge barracks, La.	Aug. 22, 1884	Act July 5, 1884	44.17 acres. G. O. 102, A. G. O., 1884.
Do .....	.....	Act June 12, 1886	By Secretary Interior to State University. G. O. 55, A. G. O., 1886.
Bennett, Fort, S. Dak. ....	.....	Order of Secretary of War of Oct. 3, 1891, G. O. 79, A. G. O., 1891.	On Indian reservation. No formal reservation.
Benton, Fort, Mont.	Jan. 5, 1883	Act Aug. 4, 1882	G. O. 110, A. G. O., 1882.
Bidwell, Fort, Cal.	Feb. 13, 1885	Act July 5, 1884	Portion, 123.26 acres. G. O. 16, A. G. O., 1885.
Do	Nov. 19, 1890	.....do	Remainder, 3,090 acres. G. O. 135, A. G. O., 1890.
Bois Blanc Island	July 22, 1884	.....do	9,199.43 acres. G. O. 80, A. G. O., 1884.
Boise, Fort, Idaho	Sept. 19, 1874	.....	Wood and sawmill reservation. Not formally reserved.
Do	Apr. 19, 1884	Act Feb. 14, 1853. Sec. 9, 10 Stat., 159.	Hay reservation in excess of 640 acres.
Bragg, Fort, Cal. ....	.....	Act July 27, 1868	On Mendocino Indian Reservation. G. O. 74, A. G. O., 1878.
Brady, Fort, Mich.	Jan. 21, 1878	Act Mar. 1, 1869	Not to exceed 1 acre to Baptist Missionary Society. G. O. 25, A. G. O., 1869.
Do .....	.....	Act Mar. 3, 1875	Grants 1.26 acres for school purposes. G. O. 41, A. G. O., 1875.
Bridger, Fort, Wyo.	Mar. 25, 1871	Act Feb. 24, 1871	Portion 496 square miles. G. O. 19, A. G. O., 1871.
Do	Feb. 15, 1872	.....do	Modifies G. O. 19, A. G. O., 1871.
Do	July 22, 1884	Act July 5, 1884	Coal reservation, 99.17 acres. G. O. 80, A. G. O., 1884.
Do	Oct. 14, 1890	.....do	10,240 acres. G. O. 123, A. G. O., 1890.
Brooke, Fort, Fla.	Jan. 4, 1883	Act Aug. 18, 1856	148.11 acres. 11 Stat., p. 87.
Buford, Fort, N. Dak.	July 30, 1891	Act July 5, 1884	Portion. Area not stated. G. O. 68, A. G. O., 1891.
Butler, Fort, N. Mex.	July 22, 1884	.....do	76,800 acres. G. O. 80, A. G. O., 1884.
Cady, Camp, Cal. ....	.....do .....	.....do	1,562 acres. G. O. 80, A. G. O., 1884.
Cameron, Fort, Utah	July 2, 1885	.....do	23,378 acres. War Dept. circular, July 9, 1885.
Cantonment, Ind. T.	Sept. 7, 1882	Act July 31, 1882	For Indian schools.
Carlin (near), Nev.	Mar. 20, 1888	Act July 5, 1884	920 acres. War Dept. circular, Mar. 26, 1888.
Carlisle barracks, Pa.	Dec. 22, 1879	Order of Secretary of War, Aug. 22, 1879.	About 30 acres. For Indian school purposes until required for military purposes.
Cascades, Fort, Wash.	Feb. 2, 1867	.....	Private claim.
Churchill, Fort, Nev.	June 15, 1871	.....	No formal reservation.
Collins, Fort, Dak.	July 16, 1872	Act May 15, 1872	G. O. 35, A. G. O., 1872.
Colville, Fort, Wash.	Feb. 26, 1887	Act July 5, 1884	1,070 acres. War Dept. circular, Mar 1, 1887.
Covington, Fort, Md.	Jan. —, 1869	Act June 25, 1868	G. O. 39, A. G. O., 1868.
Cœur d'Alene, Fort, Idaho ...	Apr. 27, 1886	Act July 5, 1884	Winter pasturage, 640 acres. War Dept. circular, May 3, 1886.

C.—List of military reservations turned over by the War Department to the Interior Department, etc.—Continued.

Name of post.	Date of relinquishment.	Authority for relinquishment.	Remarks.
Craig, Fort, N. Mex.....	Mar. 3, 1885	Act July 5, 1884.....	24,895 acres. G. O. 21, A. G. O., 1885.
Crawford, Fort, Iowa.....	.....	Act July 1, 1864.....	.....
Crawford, Fort, Colo.....	July 22, 1884	Act July 5, 1884.....	Portion. G. O. 80, A. G. O., 1884.
Do.....	Dec. 30, 1890	.....do.....	Remainder, 5,472 acres. G. O. 148, A. G. O., 1890.
Crawford, Fort, Wis.....	.....	Act Mar. 3, 1862.....	.....
Crittenden, Fort, Utah.....	July 22, 1884	Act July 5, 1884.....	94,550 acres. G. O. 80, A. G. O., 1884.
Crittenden, Camp, Ariz.....	.....do.....	.....do.....	3,278.08 acres. G. O. 80, A. G. O., 1884.
Crook, Fort, Cal.....	.....	Act Feb. 15, 1881.....	Act restores to public domain. G. O. 25, A. G. O., 1881.
Cummings, Fort, N. Mex....	Oct. 20, 1891	Act July 5, 1884.....	23,040 acres. G. O. 85, A. G. O., 1891.
Dakota, Fort, Dak.....	.....	Act July 14, 1870.....	.....
Dalles, Fort, Oreg.....	Mar. 28, 1877	Act Mar. 3, 1877.....	G. O. 24, 1877.
Date Creek, Camp, Oreg.....	Dec. 7, 1874	Act June 22, 1874.....	G. O. 88, A. G. O., 1874.
Dodge, Fort, Kans.....	Jan. 12, 1885	Act July 5, 1884.....	12,000 acres. G. O. 6, A. G. O., 1885.
Douglas, Fort, Utah.....	.....	Act May 16, 1874.....	Not to exceed 20 acres for a public cemetery. G. O. 47, A. G. O., 1874.
Do.....	Apr. 17, 1885	Act Jan. 21, 1885 (23 Stat., 284).	Portion (151.81 acres) private claim. G. O. 35, A. G. O., 1885.
Drum barracks, Cal.....	.....	Act Feb. 25, 1873.....	To be reconveyed to Banning and Wilson.
Ellis, Fort, Mont.....	July 26, 1886	Act July 5, 1884.....	32,116.10 acres. War Dept. circular, July 29, 1886.
Elliott, Fort, Tex.....	Oct. 14, 1890	.....do.....	2,560 acres. G. O. 123, A. G. O., 1890.
Fayette, Fort, Pa.....	.....	Act May 21, 1890.....	Public, No. 125.
Fetterman, Fort, Wyo.....	July 22, 1884	Act July 5, 1884.....	45,085.56 acres. G. O. 80, A. G. O., 1884.
Fred Steole, Fort, Wyo.....	Aug. 9, 1886	.....do.....	24,833.29 acres. Except cemetery site. War Department circular, Aug. 12, 1886.
Galveston, Tex.....	.....	Act July 15, 1870.....	Lands donated to city. G. O. 100, A. G. O., 1870.
Gaston, Fort, Cal.....	Feb. 11, 1892	Act July 31, 1862 (22 Stat., 181).	451.5 acres. No general order. Letter of Secretary of War of Feb. 11, 1892. See G. O. 14, A. G. O., 1892.
Gibson, Fort, Ind. T.....	Feb. 7, 1891	Act July 5, 1884.....	5,541 acres. National cemetery excepted. G. O. 15, A. G. O., 1891.
Goodwin, Camp, Ariz.....	July 22, 1884	.....do.....	5,760 acres. G. O. 80, A. G. O., 1884.
Grant (old), Camp, Ariz.....	.....do.....	.....do.....	2,031.70 acres. G. O. 80, A. G. O., 1884.
Green, Fort, R. I.....	.....	Act Feb. 23, 1887.....	To city of Newport as a public park. G. O. 25, A. G. O., 1887.
Gratiot, Fort, Mich.....	Nov. 9, 1880	Act July 20, 1868.....	Portion. G. O. 60, A. G. O., 1868.
Do.....	.....	Act Mar. 18, 1870. Amends act July 20, 1868.	20.9 acres. G. O. 49, A. G. O., 1870.
Do.....	.....	Act Mar. 3, 1873.....	Cemetery grounds. G. O. 45, A. G. O., 1873.
Do.....	.....	Act June 16, 1880.....	Remainder. G. O. 55, A. G. O., 1880.
Greenwood Island, Miss.....	Dec. 26, 1890	Act July 5, 1884.....	100 acres. G. O. 147, A. G. O., 1890.
Hall, Fort, Idaho.....	Apr. 26, 1883	Act July 31, 1862.....	For Indian schools.
Halleck, Fort, Nev.....	Oct. 11, 1886	Act July 5, 1884.....	10,900.93 acres. War Department circular, Oct. 28, 1886.
Hamer, Fort, Fla.....	Feb. 26, 1876	Act Aug. 18, 1856.....	.....
Hancock barracks, Me.....	.....	Act Mar. 14, 1872.....	Sale authorized.
Harker, Fort, Kans.....	July 12, 1880	Act June 15, 1880.....	G. O. 55, A. G. O., 1880.
Hartsuff, Fort, Nebr.....	July 22, 1884	Act July 5, 1884.....	3,251.41 acres. G. O. 80, A. G. O., 1884.
Hays, Fort, Kans.....	May 13, 1886	Act June 11, 1884.....	Portion, not to exceed 165 acres. G. O. 53, A. G. O., 1884.
Do.....	Nov. 2, 1889	Act July 5, 1884.....	Remainder, 7,600 acres. G. O. 81, A. G. O., 1889.
Hoskins, Fort, Oreg.....	Feb. 16, 1891	.....	No formal reservation.
Hot Springs, Ark.....	Aug. 27, 1890	Act July 5, 1884.....	All of square or block 94. G. O. 96, A. G. O., 1890.
Houston, Fort, Tex.....	.....	Act June 23, 1874.....	Donated to Fisk University for educational purposes. G. O. 86, A. G. O., 1874.

C.—List of military reservations turned over by the War Department to the Interior Department, etc.—Continued.

Name of post.	Date of relinquishment.	Authority for relinquishment.	Remarks.
Howard, Fort, Wis.....		Act Mar. 8, 1863.....	Portion.
Do.....		Act July 4, 1860.....	Remainder.
Hualpai, Fort, Ariz.....	Apr. 22, 1874		No formal reservation.
Humboldt, Fort, Cal.....	Apr. 6, 1870		Do.
Independence, Camp, Cal.....	July 22, 1884	Act July 5, 1884.....	5,210.38 acres. G. O. 80, A. G. O., 1884.
Jesup, Fort, La.....	Mar. 25, 1871	Act Feb. 24, 1871.....	G. O. 19, A. G. O., 1871.
Jones, Fort, Cal.....	May 27, 1870		No formal reservation.
Jupiter, Fort, Fla.....	Mar. 16, 1880	Act Aug. 18, 1856 (11 Stat., 87).	9,088.38 acres. Except light-house lot.
Kearney, Fort (old), Iowa.....		Act Apr. 15, 1874.....	
Kearney, Fort, Nebr.....	Dec. 2, 1876	Act July 21, 1876.....	G. O. 111, A. G. O., 1876.
Keogh, Fort, Mont.....		Act July 30, 1890 (Public, 218).	Portion east of Tongue River.
Key Biscaine, Fla.....	July 9, 1870	Act Aug. 18, 1856.....	
Klamath, Fort, Oreg.....	May 4, 1886	Act July 5, 1884.....	3,335.68 acres. War Department circular, May 6, 1886.
Lane, Fort, Oreg.....	Mar. 25, 1871	Act Feb. 24, 1871.....	G. O. 19, A. G. O., 1871.
Lapwai, Fort, Idaho.....	June 5, 1882	Act July 31, 1882.....	Post reserve for Indian schools.
Do.....	May 7, 1884	Act Feb. 14, 1853 (10 Stat., 159).	Hay reservation in excess of 640 acres.
Laramie, Fort, Wyo.....		Act Aug. 14, 1876.....	Restores a portion to public domain. G. O. 90, A. G. O., 1876.
Do.....	June 9, 1890	Act July 5, 1884.....	G. O. 60, A. G. O., 1890.
Larned, Fort, Kans.....	Mar. 28, 1883	Act Aug. 4, 1882.....	G. O. 110, A. G. O., 1882.
Leavenworth, Fort, Kans.....	Dec. 23, 1868	Act July 2, 1868.....	Sale of 20 acres in southeast corner to Leavenworth Coal Co.
Do.....		Act Feb. 9, 1871.....	Sale of 128.82 to Kansas Agricultural and Mechanical Association. G. O. 14, A. G. O., 1871.
Do.....		Act Mar. 2, 1889.....	Lease of 9.75 acres to Leavenworth Water Co. while lands are used as a military site. G. O. 39, A. G. O., 1889.
Lewis, Fort, Colo.....	Nov. 12, 1891	Act July 31, 1882 (22 Stat., 181).	30,336 acres. G. O. 89, A. G. O., 1891.
Little Rock Barracks, Ark..	Oct. 14, 1890	Act July 5, 1884.....	36.01 acres. G. O. 122, A. G. O., 1890.
Logan, Fort, Mont.....	June 4, 1881	Act May 8, 1880.....	Sale at auction. G. O. 38, A. G. O., 1880.
Louisiana, State of *.....	Sept. 23, 1886	Act July 5, 1880.....	6,170.79 acres. War Department circular, Sept. 28, 1886.
Lowell, Fort, Ariz.....	Mar. 5, 1891	Act July 5, 1884.....	Area not stated. G. O. 24, A. G. O., 1891.
Lyon, Fort (old), Colo.....	July 22, 1884	.....do.....	38,000 acres. G. O. 80, A. G. O., 1884.
Lyon, Fort, Colo.....	Dec. 2, 1889	.....do.....	5,874 acres. G. O. 9, A. G. O., 1890.
McDermitt, Fort, Nev.....	Dec. 1, 1886	.....do.....	Hay reservation, 6,400 acres. War Department circular, Dec. 3, 1886.
Do.....	July 24, 1889	.....do.....	Post reserve, 3,974.40 acres. G. O. 67, A. G. O., 1889.
McGarry, Camp, Nev.....	Mar. 25, 1871	Act Feb. 24, 1871.....	G. O. 19, A. G. O., 1871.
McDowell, Fort, Ariz.....	Oct. 1, 1890	Act July 31, 1882 (22 Stat., 181).	Post, buildings, etc., for Indian school purposes until required for military purposes. G. O. 115, A. G. O., 1890.
Do.....	Mar. 2, 1891	Act July 5, 1884.....	Containing 25,628 acres. G. O. 22, A. G. O., 1891.
McHenry, Fort, Md.....		Act June 10, 1878.....	Site for a dry dock to Baltimore Dry Dock Co. G. O. 44, A. G. O., 1878.
McKinney, Fort, Wyo.....	Jan. 16, 1889	Act July 5, 1884.....	Portion, estimated, 640 acres. G. O. 5, A. G. O., 1889.
McPherson, Fort, Nebr.....	Jan. 5, 1887	.....do.....	19,500 acres. All except national cemetery tract. War Department circular, Jan. 10, 1887.
McRae, Fort, N. Mex.....	July 22, 1884	.....do.....	2,560 acres. G. O. 80, A. G. O., 1884.
Mackinac, Fort, Mich.....		Act Mar. 1, 1879.....	Portion to Messrs. Wendell, Van Allen & Bailey. G. O. 19, A. G. O., 1879.
Maginnis, Fort, Mont.....	Aug. 14, 1890	Act July 5, 1884.....	31,059.21 acres. G. O. 91, A. G. O., 1890.

* Ten reservations on the Gulf coast, as follows: One near the eastern mouth of Bayou Lafourche; one near western mouth of Bayou Lafourche; one on Bayou Plat; one near western entrance to Caminada Bay; one near the pass at the eastern end of Grand Terre Island; one near the mouth of Quatre Bayou Pass; one at Bastian Bay; three near Bastian Bay.

C.—List of military reservations turned over by the War Department to the Interior Department, etc.—Continued.

Name of post.	Date of relin- quishment.	Authority for relin- quishment.	Remarks.
Mason, Fort (Point San Jose), Cal.	.....	Act July 1, 1870.....	Portion to the city and county of San Francisco, Cal. G. O. 87, A. G. O., 1870.
Missouri River, island in, Mo.	July 22, 1884	Act July 5, 1884.....	G. O. 80, A. G. O., 1884.
Mojave, Fort, Ariz.....	Sept. 29, 1890	Act July 31, 1882 (22 Stat., 181).	14,697 acres. Indian school purposes until required for military occupation. G. O. 111, A. G. O., 1890.
Mount Vernon Barracks, Ala.	Mar. 2, 1893	Letter of Secretary of War of Mar. 2, 1893.	All that portion south of Cedar Creek.
Oglethorpe Barracks, Ga.....	Apr. 7, 1884	Act Apr. 7, 1882.....	G. O. 46, A. G. O., 1882.
Oklahoma, Okla.....	Oct. 4, 1892	Act July 5, 1884.....	160 acres. G. O. 69, A. G. O., 1892.
Pagosa Springs (old Fort Lewis, Colo.)	July 22, 1884	.....do.....	21,838.08 acres. G. O. 80, A. G. O., 1884.
Pikes Peak, Colo.....	Jan. 16, 1889	.....do.....	8,192 acres. G. O. No. 5 of 1889.
Plattsburg Barracks, N. Y.....	.....	Act June 8, 1872.....	25 acres to the New York and Canada R. R. Co. G. O. 66, A. G. O., 1872.
Do.....	.....	Act June 30, 1879.....	2 acres, etc., to R. R. Co. G. O. 70, A. G. O., 1879.
Point Roberts, Wash.....	Sept. 23, 1890	Act July 5, 1884.....	1,472 acres. G. O. 107, A. G. O., 1890.
Presidio of San Francisco, Cal.	.....	Act May 9, 1876.....	Portion to city of San Francisco. G. O. 44, A. G. O., 1876.
Randall, Fort, Dak.....	.....	Act May 18, 1874.....	Portion. G. O. 47, A. G. O., 1874.
Do.....	July 22, 1884	Act July 5, 1884.....	Portion (24,503.53 acres north of Missouri River) not already transferred under act of May 18, 1874. G. O. 80, A. G. O., 1884.
Do.....	.....	Act Oct. 1, 1890 (Public, 343).	Portion open to settlers.
Fort Randall.....	Oct. 20, 1893	Act July 5, 1884.....	Remainder, 92,160 acres, G. O. 84, 1893.
Ransom, Fort, N. Dak.....	July 14, 1880	Act June 10, 1880.....	G. O. 55, A. G. O., 1880.
Reading, Fort, Cal.....	.....	Act Feb. 15, 1881.....	Restored to public domain. G. O. 25, A. G. O., 1881.
Reynolds, Fort, Colo.....	July 18, 1874	Act June 19, 1874.....	G. O. 88, A. G. O., 1874.
Rice, Fort, S. Dak.....	July 22, 1884	Act July 5, 1884.....	Estimated at 102,400 acres. G. O. 80, A. G. O., 1884.
Ridgely, Fort, Minn.....	.....	Act July 1, 1870.....	G. O. 87, A. G. O., 1870.
Ruley, Fort, Kans.....	.....	Joint resolution of Mar. 2, 1867.	Reduces area, etc. G. O. 29, A. G. O., 1867.
Ripley, Fort, Minn.....	.....	Act Feb. 28, 1873.....	Portion. G. O. 28, A. G. O., 1873.
Do.....	July 2, 1880	Act Apr. 1, 1880.....	Restored to public domain. G. O. 22, A. G. O., 1880.
Rush Lake Valley, Utah.....	July 22, 1884	Act July 5, 1884.....	5,131.47 acres. G. O. 80, A. G. O., 1884.
Sabine, Fort, La.....	Mar. 25, 1871	Act Feb. 24, 1871.....	G. O. 19, A. G. O., 1871.
St. Augustine, Fla.....	Oct. 15, 1883	Act Aug. 18, 1856 (11 Stat., 88).	0.1619 and 0.12786 acre. Hospital lot and blacksmith's shop lot.
Do.....	Mar. 18, 1886	Act July 5, 1884.....	Old powder-house lot, or governor's garden lot, 10.29 acres.
Do.....	Nov. 18, 1886	.....do.....	Dragon barracks lot, 1.15 acres. War Department circular, Nov. 20, 1886.
St. Marks, Fla.....	Oct. 27, 1892	Act July 5, 1884.....	50 acres. G. O. 74, A. G. O., 1892.
Sanders, Fort, Wyo.....	.....	Act June 9, 1874.....	Reduces area. G. O. 60, A. G. O., 1874.
Do.....	Aug. 22, 1884	Act July 5, 1884.....	19,342 acres. G. O. 102, A. G. O., 1884.
Sedgwick, Fort, Colo. and Nebr.	July 22, 1884	.....do.....	40,960 acres. G. O. 80, 1884.
Selden, Fort, N. Mex.....	Apr. 9, 1890	Act July 31, 1882 (22 Stat., 181).	G. O. 44, A. G. O., 1890.
Do.....	Mar. 30, 1892	Act July 5, 1884.....	9,613.7381 acres. G. O. 26, A. G. O., 1892.
Seward, Fort, Dak.....	July 14, 1880	Act June 10, 1880.....	G. O. 55, A. G. O., 1880.
Shaw, Fort, Mont.....	Apr. 30, 1892	Act July 31, 1882 (22 Stat., 181).	29,843 acres. G. O. 30, A. G. O., 1892.
Sheridan, Camp, Nebr.....	July 22, 1884	Act July 5, 1884.....	18,225 acres. G. O. 80, A. G. O., 1884.
Smith, Fort, Ark.....	Mar. 25, 1871	Act Feb. 24, 1871.....	G. O. 19, A. G. O., 1871.
Sisseton, Fort, Dak.....	Apr. 22, 1889	Act July 5, 1884.....	81,920 acres. War Department circular, May 1, 1889.
Snelling, Fort, Minn.....	Dec. 23, 1873	Act May 7, 1870.....	Reduced to 1,531.21 acres. G. O. 66, A. G. O., 1870.
Soldiers Key, Fla.....	July 9, 1870	Act Aug. 18, 1856.....	No formal reservation.
Stambaugh, Camp, Wyo.....	May 3, 1881	.....	Reduces reservation. G. O. 35, A. G. O., 1872.
Stanton, Fort, N. Mex.....	Aug. 7, 1872	Act May 21, 1872.....	

C.—List of military reservations turned over by the War Department to the Interior Department, etc.—Continued.

Name of post.	Date of relinquishment.	Authority for relinquishment.	Remarks.
Stellacoom, Fort, Wash.....	.....	Act Apr. 15, 1874.....	Donates portion to Washington for use of insane asylum. G. O. 32, A. G. O., 1874.
Do.....	July 22, 1884	Act July 5, 1884.....	289 acres. G. O. 80, A. G. O., 1884.
Stevenson, Fort, Dak.....	Apr. 19, 1883	Act July 31, 1882.....	For Indian schools.
Sullivan, Fort, Me.....	July 24, 1884	Act July 5, 1884.....	12.5 acres. G. O. 80, A. G. O., 1884.
Sumner, Fort, N. Mex.....	Mar. 25, 1871	Act Feb. 24, 1871.....	Except national cemetery. G. O. 19, A. G. O., 1871.
Sulphur Creek, Wyo.....	July 22, 1884	Act July 5, 1884.....	Coal reservation. G. O. 80, A. G. O., 1884.
Thornburg, Fort, Utah.....	.....do.....	.....do.....	21,851 acres. G. O. 80, A. G. O., 1884.
Thomas, Fort, Ariz.....	Dec. 2, 1892	.....do.....	10,487 acres. G. O. 81, A. G. O., 1892.
Three Forks, Owyhee, Camp Idaho.	July 22, 1884	.....do.....	4,800 acres. G. O. 80, A. G. O., 1884.
Totten, Fort, Dak.....	Oct. 1, 1890	Act July 31, 1882 (22 Stat., 181).	Post, buildings, etc., for Indian school purposes until required for military purposes. G. O. 115, A. G. O., 1890.
Uncompahgre, Cantonment, on Colorado.	July 22, 1884	Act July 5, 1884.....	Portion 4,000 acres. G. O. 80, A. G. O., 1884.
Verde, Fort, Ariz.....	.....do.....	.....do.....	Garden tract, 3,000 acres. G. O. 80, A. G. O., 1884.
Do.....	Oct. 14, 1890	.....do.....	9,293.79 acres. G. O. 123, A. G. O., 1890.
Wallace, Fort, Kans.....	July 22, 1884	.....do.....	8,928.09 acres. G. O. 80, A. G. O., 1884.
Walla Walla, Fort, Wash....	Oct. 26, 1875	Act Apr. 29, 1872.....	Portion of hay reserve. G. O. 35, A. G. O., 1872.
Do.....	.....do.....	Act June 8, 1872.....	Timber reserve. G. O. 66, A. G. O., 1872.
Do.....	May 3, 1880	.....do.....	Remainder of hay reserve.
Do.....	.....do.....	.....do.....	Portion of post reservation.
Wallen, Camp, Ariz.....	Apr. 22, 1874	.....do.....	No formal reservation.
Washita, Fort, Ind. T.....	July 1, 1870	.....do.....	Do.
Waterford, Pa.....	.....	Act Mar. 4, 1868.....	.
Wayne, Fort, Ark.....	Mar. 26, 1871	Act Feb. 24, 1871.....	G. O. 19, A. G. O., 1871.
Whipple barracks, Ariz.....	Oct. 21, 1875	Act June 22, 1874.....	Portion. G. O. 88, A. G. O., 1874.
Do.....	July 22, 1884	Act July 5, 1884.....	Timber reserve, 720 acres. G. O. 80, A. G. O., 1884.
White River, Camp, on Colorado.	.....do.....	.....do.....	40,960 acres. G. O. 80, A. G. O., 1884.
Wilkins, Fort, Mich.....	.....do.....	.....do.....	148.35 acres. G. O. 80, A. G. O., 1884.
Willow Grove, Camp, Ariz....	Apr. 22, 1874	.....do.....	No formal reservation.
Wilmington Depot, Cal.....	.....	Act Feb. 25, 1873.....	To be reconveyed to Banning and Wilson. G. O. 45, A. G. O., 1875.
Yuma, Fort, Ariz.....	Dec. 7, 1874	Act June 22, 1874.....	Portion. G. O. 88, A. G. O., 1874.
Yuma, Fort, Ariz. and Cal....	Jan. 9, 1884	.....do.....	Indian school purposes.
Do.....	July 22, 1884	Act July 5, 1884.....	Inoperative. G. O. 80, A. G. O., 1884.
Zarah, Fort, Kans.....	Mar. 25, 1871	Act Feb. 24, 1871.....	G. O. 19, A. G. O., 1871.

D.—Military reservations, showing location, size, how occupied, etc., on June 30, 1894.

Adams, Fort, R. I.—Latitude, $41^{\circ} 28'$; longitude, $71^{\circ} 22'$. On Brentons Point, 3 miles from Newport, which is the post-office, railroad and telegraph station, and from which the post is reached by boat or road. Contains $138\frac{1}{2}$ acres. Jurisdiction ceded to United States. Accommodations for 16 officers in cottages and 7 in casemates, 1 light battery, and 3 batteries of artillery. Water supply from Newport City waterworks. Sewer system.

Alcatraz Island, Cal.—Latitude, $37^{\circ} 49'$; longitude, $122^{\circ} 27'$. In San Francisco Bay, 4 miles northeast from city. Post-office at post. Railroad and telegraph station, San Francisco. Government steamer to post daily, except Sunday. Reservation, the whole island, about 12 acres. Jurisdiction ceded to United States. Accommodations for 10 officers and 2 companies artillery. Salt water pumped from the bay by steam power. Fresh water brought from San Francisco on steamer and stored in cisterns. Sewer system.

Angel Island, Cal.—Latitude, $37^{\circ} 48'$; longitude, $122^{\circ} 28'$. In San Francisco Bay, 7 miles northeast from the city. Post-office and telegraph station at post. Railroad station, San Francisco. Government steamer to post daily, except Sunday. Reservation, the entire island, about 640 acres. Jurisdiction ceded to United

States. Accommodations for 13 officers, 5 companies infantry, and band. Water supply from springs conducted by gravity to 4 reservoirs of total capacity 235,000 gallons, thence distributed to all parts of post. Sewer system.

Anastasia Island, Fla.—Latitude, $29^{\circ} 52'$; longitude, $81^{\circ} 16'$; about $1\frac{1}{2}$ miles from St. Augustine. Reservation of about 700 acres declared by Executive, August 21, 1893 (G. O. 68 of 1893, A. G. O.). Jurisdiction ceded to United States. Measures taken to secure additional 40 acres for site for buildings.

Apache, Fort, Ariz.—Latitude, $33^{\circ} 47'$; longitude, $109^{\circ} 57'$. On White Mountain River, Apache County, 339 miles from Prescott, and 90 miles from Holbrook, on Atlantic and Pacific Railroad. Post-office and telegraph station at post. Buckboard daily, except Sunday, from Holbrook. Reservation, 7,421 acres. Accommodations for 15 officers, 5 troops cavalry, and 2 companies infantry. Water supply brought through an acequia by gravity from 3 miles up White River, then pumped into reservoir (80,000 gallons). No sewer system.

Assinniboine, Fort, Mont.—Latitude, $48^{\circ} 30'$; longitude, $109^{\circ} 45'$. On Beaver Creek, $1\frac{1}{2}$ miles from station of same name on Great Northern Railroad, 209 miles from Helena, and 966 miles from St. Paul. Post-office and telegraph station at post. Railroad station, Assinniboine, Mont. Reservation, about 704,000 acres, reduced by G. O. 85 of 1891. Jurisdiction ceded to United States. Accommodations for 35 officers, 4 troops cavalry, and 6 companies infantry. Water supply from Beaver Creek, forced by steam power into distributing tank of 60,000 gallons capacity. No sewer system; natural drainage.

Barrancas, Fort, Fla.—Latitude, $30^{\circ} 19'$; longitude, $87^{\circ} 16'$. On north side of Pensacola Harbor, 9 miles southwest of Pensacola, 1 mile from Fort Pickens. Post-office, Warrington, Fla.; telegraph station, Pensacola navy-yard; railroad station at Pensacola; special boat to post; electric railroad from Pensacola to post. Reservation contains about 2,500 acres, the boundaries of which were modified by G. O. 18, A. G. O., 1892. Jurisdiction ceded to United States. Accommodations for 11 officers and 2 batteries of artillery. Water supply pumped from wells into tank of 35,250 gallons capacity and distributed by gravity. Sewer system.

Bayard, Fort, N. Mex.—Latitude, $32^{\circ} 48'$; longitude, $108^{\circ} 9'$; 9 miles from Silver City, on Atchison, Topeka and Santa Fe Railroad. Post-office and telegraph station at post. Railroad station, Silver City, N. Mex. Reservation, 13 square miles and 520 acres. Accommodations for 20 officers, 4 troops cavalry, 3 companies infantry, and band. Water supply pumped from springs to reservoir of 50,000 gallons capacity, thence distributed by gravity. Sewer system.

Benicia barracks, Cal.—Latitude, $38^{\circ} 2'$; longitude, $122^{\circ} 7'$. Post-office, telegraph, railroad station, and boat landing, Benicia; distant 1 mile. Reservation, 98.78 acres. Jurisdiction ceded to United States. Accommodations for 9 officers and 3 companies infantry. Water supply from Benicia Water Company and well at post. Sewer system.

Bliss (old), Fort, Tex.—Latitude, $31^{\circ} 44'$; longitude, $106^{\circ} 29'$. On Rio Grande, $1\frac{1}{2}$ miles above El Paso, on Atchison, Topeka and Santa Fe and Southern Pacific railroads. Post-office, telegraph and railroad station, El Paso, Tex. Reservation, 134.85 acres. Accommodations for 7 officers; 2 barracks. Water supply from El Paso city waterworks. Sewer system. Under act of March 1, 1890 (G. O. 25, 1890), the buildings and grounds were advertised to be sold March 5, 1894; but the sale was postponed. Troops withdrawn May 31, 1894. Custodian in charge.

Bliss (new), Fort, Tex.—Latitude, $31^{\circ} 48'$; longitude, $106^{\circ} 25'$. On Kansas City, El Paso and Mexican Railroad, about 5 miles northeast of the city of El Paso. Post-office, telegraph and railroad station, El Paso, Tex. Reservation, 1,265.7 acres. Title acquired under act of March 1, 1890. Jurisdiction ceded to the United States. Accommodations for 14 officers and 4 companies infantry. Complete water system; supply from artesian wells. Sewer system.

Boise barracks, Idaho.—Latitude, $43^{\circ} 32'$; longitude, $116^{\circ} 10'$. On Boise River, 2 miles from Boise City, 36 miles from Idaho City, and 511 miles from Vancouver barracks, Wash. Post-office, telegraph and railroad station, Boise City. Reservation, 640 acres. Jurisdiction ceded to the United States. Accommodations for 7 officers, 1 troop cavalry, 1 company infantry. Water supply from springs, thence to reservoir of 54,000 gallons capacity, and distributed by gravity. Sewer system.

Bowie, Fort, Ariz.—Latitude, $32^{\circ} 10'$; longitude, $109^{\circ} 22'$. In Apache Pass, 12 miles from Bowie Station, on Southern Pacific Railroad. Post-office and telegraph station at post. Daily wagon from Bowie Station. Reservation, 36 square miles (23,040 acres). Accommodations for 8 officers, 2 troops cavalry, and 1 company infantry. Water supply from Bear Springs, pumped by steam power to reservoir of 3,400 gallons capacity, and distributed by gravity. Sewer system.

Brady (old) Fort, Mich.—Latitude, $46^{\circ} 30'$; longitude, $84^{\circ} 20'$. Within the limits of city of Sault Ste. Marie, on right bank of St. Marys River. Post-office, telegraph and railroad station, Sault Ste. Marie. Boat lands at post in summer. Reservation, $26\frac{1}{2}$ acres. Under act of July 8, 1886 (G. O. 52 of 1886), all the buildings and a portion

of the lots have been sold. Remaining lots in charge of post quartermaster, new Fort Brady.

Brady (new), Fort, Mich.—Latitude, $46^{\circ} 30'$; longitude, $84^{\circ} 20'$. West of and adjoins the city of Sault Ste. Marie, Mich., on Duluth, South Shore and Atlantic Railroad. Post-office, telegraph and railroad station, Sault Ste. Marie. Reservation, about 75 acres. Title acquired under provisions of act of July 8, 1886. No special cession of jurisdiction unless embraced in general provisions of State act of March 21, 1874. Accommodations for 12 officers and 4 companies infantry. Water supply from Sault Ste. Marie waterworks. Sewer system.

Brown, Fort, Tex.—Latitude, $25^{\circ} 53'$; longitude, $97^{\circ} 21'$. On the Rio Grande, adjoining city of Brownsville. Post-office, telegraph and railroad station, Brownsville. Reservation, 358½ acres, owned by private parties. Occupied and used by the United States since March, 1846, without payment of rent or taxes. Appropriation for purchase at \$160,000. Payment suspended by authority of resolution of Congress. Suit pending in Court of Claims to compel payment. Accommodations for 20 officers, 2 troops cavalry, 2 companies infantry. Water supply pumped from Rio Grande into distributing tanks of total capacity of 52,000 gallons. No sewer system. Open drains.

Buford, Fort, N. Dak.—Latitude, $47^{\circ} 59'$; longitude, $103^{\circ} 58'$. On Missouri River, 2 miles below mouth of Yellowstone, on line of Great Northern Railroad, 660 miles from St. Paul. Post-office, telegraph and railroad station at post. Reservation, about 506,042 acres. Reduced by G. O. 68 of 1891 and area not stated. Jurisdiction ceded to United States. Accommodations for 18 officers, 2 troops cavalry, 4 companies infantry, and band. Water supply pumped from the Missouri River into an elevated tank of 50,000 gallons capacity, thence distributed to post. Partial sewer system.

Canby Fort, Wash.—Latitude, $46^{\circ} 17'$; longitude, $124^{\circ} 3'$. Near mouth of Columbia River, on north bank, 14 miles from Astoria, 7 miles from Fort Stevens, Oreg., 112 miles from Portland, Oreg., and 118 miles from Vancouver barracks, Wash. Post-office and telegraph station at post; daily steamer from Portland to Astoria, 98 miles, thence by steam tug to post, 14 miles. Reservation, 588.2 acres. Jurisdiction ceded to United States. Accommodations for 7 officers and 2 batteries of artillery. Water supply pumped to reservoir of 47,000 gallons capacity from dams in ravines, thence distributed by gravity. Sewer system.

Carroll, Fort, Md.—Latitude, $39^{\circ} 15'$; longitude, $76^{\circ} 35'$. Post-office and telegraph station, Baltimore; distant 6½ miles from Light street wharf. Reservation, 4 acres. Jurisdiction ceded to United States. Not garrisoned. In charge of Engineer Department.

Caswell, Fort, N. C.—Latitude, 34° ; longitude, $78^{\circ} 1'$. Oak Island, North Carolina, 2 miles from Southport and 22 miles from Wilmington. Post-office and telegraph station, Southport, N. C. Steamer daily from Wilmington to Southport. Reservation, about 2,325 acres. Jurisdiction ceded to United States. Not garrisoned. In charge of ordnance sergeant.

Clark, Fort, Tex.—Latitude, $29^{\circ} 17'$; longitude, $100^{\circ} 25'$. On Las Moras Creek, adjoining Brackettville, 10 miles from Spofford Junction, on Southern Pacific Railroad, and 143 miles from San Antonio. Post-office, Brackettville, Tex.; telegraph station, Fort Clark, via Spofford Junction; daily stage from Spofford Junction. Reservation, 3,963.2 acres. Jurisdiction ceded to United States. Accommodations for 35 officers, 8 troops cavalry, and 5 companies infantry. Water supply from Las Moras Springs pumped into tanks of 37,580 gallons' capacity, thence distributed by iron pipes. No sewer system.

Clarks Point, Mass.—Latitude, $41^{\circ} 35'$; longitude, $90^{\circ} 54'$. Three miles from New Bedford, which is the post-office and telegraph station. Reservation, 60 acres. Jurisdiction ceded to United States. Not garrisoned. In charge of ordnance sergeant.

Clinch, Fort, Fla.—Latitude, $30^{\circ} 41'$; longitude, $81^{\circ} 28'$. On Amelia Island, Florida, 3 miles from Fernandina, which is the post-office, telegraph, and railroad station. Reservation, 419.44 acres. Jurisdiction ceded to United States. Not garrisoned. In charge of ordnance sergeant.

Columbus barracks, Ohio.—Latitude, $39^{\circ} 57'$; longitude, $82^{\circ} 59'$. Post-office and railroad station, Columbus, Ohio; telegraph station at post. Reservation, 77 acres 3 roods 8 perches. Jurisdiction ceded to United States. Recruiting depot. Accommodations for 19 officers, 8 companies infantry, and 100 recruits. Water supply, Columbus City waterworks. Sewer system.

Columbus, Fort, New York Harbor.—Latitude $40^{\circ} 42'$; longitude, $74^{\circ} 9'$. On Governors Island, at junction of North and East rivers, 2 miles from New York City. Post-office and telegraph station, Governors Island, N. Y. Government steamer from New York City, pier No. 3, East River. Contains about 65½ acres. Jurisdiction ceded to United States. Fort Columbus will accommodate 10 officers and 3 batteries of artillery. Governors Island (headquarters Department of the East)

has accommodations for 18 officers. Water supply from Brooklyn City water-works. Sewer system.

Constitution, Fort, N. H.—Latitude, $43^{\circ} 4'$; longitude, $70^{\circ} 49'$. On Great Island, New Hampshire, 3 miles from Portsmouth. Post-office, New Castle, N. H. Telegraph and railroad station, Portsmouth. Stage or steamer from Portsmouth. Reservation, $3\frac{1}{4}$ acres. Jurisdiction ceded to United States. Not garrisoned. In charge of ordnance sergeant.

Crook, Fort, Nebr.—Latitude, $41^{\circ} 20'$; longitude, 96° . On the Union Pacific Railroad, about 5 miles southwest of the city of Omaha. Post-office, telegraph, and railroad station, Omaha. Reservation, 545.67 acres, acquired under act of July 23, 1888. Jurisdiction ceded to United States. The reservation has been inclosed, and the post, including water and sewer system, is in course of construction. Not yet garrisoned.

Custer, Fort, Mont.—Latitude, $45^{\circ} 44'$; longitude, $107^{\circ} 31'$. On the Big Horn River, 32 miles from Custer Station, on Northern Pacific Railroad, 13 miles from Custer battlefield, 838 miles from St. Paul, 92 miles from Sheridan, Wyo. Post-office and telegraph station at post. Daily stage and mail from Custer Station. Reservation, 36 square miles. Custer battlefield, 1 square mile. Jurisdiction ceded to United States. Accommodations for 24 officers, 7 troops cavalry, 1 company infantry, and band. Water pumped from Little Big Horn River by steam power to elevated tank of 20,000 gallons capacity, thence distributed by a system of pipes. Natural drainage. Partial sewer system.

D. A. Russell, Fort, Wyo.—Latitude, $41^{\circ} 8'$; longitude, $104^{\circ} 50'$. On Union Pacific, Denver and Gulf Railroad, 3 miles west of Cheyenne, on Union Pacific Railroad. Post-office, telegraph, and railroad station (Cheyenne and Northern) at post. Post reservation, 4,512 acres. Hay reservation, 2,540.64 acres. Jurisdiction ceded to United States. Accommodations for 34 officers, 4 troops cavalry, 5 companies infantry, and band. Water supply system is received from Crow Creek by percolation through the gravel strata into five wells; it is pumped into two reservoirs of total capacity of about 200,000 gallons, thence distributed to post. Sewer system.

David's Island, New York Harbor.—Latitude, $40^{\circ} 53'$; longitude, $73^{\circ} 48'$. At the southwestern extremity of Long Island Sound, 2 miles from New Rochelle, Westchester County, N. Y., and 22 miles from New York City. Post-office at post. Telegraph station, New Rochelle, N. Y. Horse cars and boat to post. Reservation, the entire island, about $86\frac{1}{4}$ acres. Jurisdiction ceded to United States. Recruiting depot. Accommodations for 13 officers, 6 companies infantry. Water supply from New Rochelle waterworks. Sewer system.

Davis, Fort, Tex.—Latitude, $30^{\circ} 36'$; longitude, $103^{\circ} 36'$. In a pass of the Apache Mountains, 22 miles from Marfa, on the Southern Pacific Railroad. Post-office, telegraph, and railroad station, Marfa. Reservation, 300 acres. Jurisdiction ceded to United States. Not garrisoned.

Delaware, Fort, Del.—Latitude, $39^{\circ} 35'$; longitude, $76^{\circ} 34'$. On Pea Patch Island, Delaware, $1\frac{1}{4}$ miles from Delaware City and 42 miles from Philadelphia. Post-office and telegraph station, Delaware City. Daily steamer from Philadelphia to Delaware City. Reservation, about 90 acres. Jurisdiction ceded to United States. Not garrisoned. In charge of ordnance sergeant.

Del Rio, Camp, Tex.—Latitude, $29^{\circ} 22'$; longitude, $100^{\circ} 46'$. On the Southern Pacific Railroad, 1 mile from station. Reservation, 407.93 acres. Jurisdiction ceded to United States. Accommodations for 4 officers and 40 men (estimated). Not garrisoned. Reservation retained by War Department.

Douglas, Fort, Utah.—Latitude, $40^{\circ} 46'$; longitude, $111^{\circ} 56'$. Four miles east of and overlooking Salt Lake City. Post-office, telegraph, and railroad station, Salt Lake City, which is on Utah Central and Rio Grande Western railroads, 37 miles from Ogden on Union Pacific Railroad. Electric cars from Salt Lake City to post; also trains on Salt Lake and Fort Douglas Railroad. Reservation, 4 square miles, less 151 acres surrendered by act of Congress and 20 acres set apart for a cemetery; enlarged by act of March 3, 1887, and by G. O. 39, of 1890, to 8,748.19 acres. Accommodations for 27 officers, 10 companies infantry, and band. Water supply piped by gravity to reservoir of 700,000 gallons capacity at post and distributed through pipes. Sewer system.

Duchesne, Fort, Utah.—Latitude, $40^{\circ} 16'$; longitude, $109^{\circ} 52'$. On right bank of the Uintah River, about 8 miles above its confluence with the Duchesne River, and on the road between Ouray (about 20 miles distant) and White Rocks (about 15 miles distant). Post reached by wagon and stage from Price Station, distance 85 miles, on Rio Grande Western Railroad. Freight sent by this route. Post-office and telegraph station at post. Reservation provisional, 6 square miles, within the limits of the Uintah Indian Reservation. Accommodations for 19 officers, 2 troops cavalry, 4 companies infantry. Water supplied by water wagon. No sewer system. G. O. 70, of 1892, directs withdrawal of garrison and abandonment of post.

Dutch Island, R. I.—Latitude, $41^{\circ} 30'$; longitude, $71^{\circ} 24'$. Five miles from Newport. Post-office, Jamestown, R. I.; telegraph station, Newport. Steam ferry from Newport to Jamestown, 4 miles, thence private boat to post, 1 mile. Reservation, 75 acres. Jurisdiction ceded to United States. Not garrisoned. In charge of ordnance sergeant.

Eagle Pass, Tex.—An outpost of Fort Clark. Latitude, $28^{\circ} 42'$; longitude, $100^{\circ} 30'$. In Maverick County; part of old Fort Duncan. Reservation, 155.34 acres. Jurisdiction ceded to United States. Post-office, telegraph, and railroad station at post. Accommodations for 8 officers and 1 troop cavalry. Water purchased for domestic purposes as emergency demands. Measures taken for sinking a well, etc. No sewer system.

El Paso, Tex.—Two blocks, Nos. 7 and 8, in city proper, each 260 feet square, covered by deed dated December 10, 1874. Title confirmed by Department of Justice. Jurisdiction ceded to United States. Heretofore used for cemeterial purposes. April 6, 1894, these lots were transferred to the city of El Paso for park and other public uses under executive order. (See G. O. 11 of 1894.)

Ethan Allen, Fort, Vt.—Latitude, $44^{\circ} 30'$; longitude, $73^{\circ} 10'$. Situated partly in Colchester and partly in Essex townships, Chittenden County, 2 miles from Essex Junction and 6 miles from Burlington. Railroad station at post. Reservation, 600 acres. Jurisdiction ceded to United States. Accommodations for 12 officers and 4 troops cavalry. Water is obtained from two drive wells, forced by Poble air-lift pump into cistern of about 2,400 gallons capacity in pump house, thence pumped into standpipe of 50,000 gallons capacity, and distributed throughout post by 6-inch main. Sewer system.

Finns Point, N. J.—Latitude, $39^{\circ} 32'$; longitude, $75^{\circ} 45'$. On Delaware River, 6 miles from Salem, N. J., which is the post-office, telegraph, and railroad station. Reservation, 104.35 acres. Jurisdiction ceded to United States. Not garrisoned. In charge of Engineer Department.

Foots, Fort, Md.—Latitude, $38^{\circ} 48'$; longitude, $77^{\circ} 41'$. On Potomac River, 9 miles from Washington. Post-office at post. Telegraph station, Alexandria, Va. Steamboats from Washington, D. C. Reservation, about $66\frac{1}{2}$ acres. Jurisdiction ceded to United States. Not garrisoned. In charge of ordnance sergeant.

Gaines, Fort, Ala.—Latitude, $30^{\circ} 15'$; longitude, $88^{\circ} 4'$. On Dauphin Island, Ala., 30 miles from Mobile by boat, which is the post-office, telegraph, and railroad station. Reservation, about 983.9 acres. Jurisdiction ceded to United States. Not garrisoned. In charge of ordnance sergeant.

Goose Island, Wash.—Latitude, $48^{\circ} 31'$; longitude, $122^{\circ} 58'$. In the Strait of San Juan de Fuca.

Georges, Fort Me.—Latitude, $43^{\circ} 39'$; longitude, $70^{\circ} 13'$. On Hog Island, Portland Harbor, Me., 2 miles from Portland, which is the post-office, telegraph, and railroad station. Reservation about $1\frac{1}{2}$ acres. Jurisdiction ceded to the United States. Not garrisoned. In charge of ordnance sergeant.

Grant, Fort, Ariz.—Latitude, $32^{\circ} 37'$; longitude, $109^{\circ} 54'$. Twenty-seven miles from Wilcox, on the Southern Pacific Railroad. Post-office and telegraph station at post. Daily stage (except Sunday) from Wilcox. Reservation, 42,341 acres. Accommodations for 17 officers, 6 troops cavalry, 1 company infantry. Water supply piped from reservoir of 75,000 gallons capacity, fed by streams. Sewer system.

Griswold, Fort, Conn.—Latitude, $41^{\circ} 22'$; longitude, $81^{\circ} 8'$. Groton Heights, 1 mile from New London. Post-office, Groton, Conn. Telegraph and railroad station, New London. Ferry from New London to post. Reservation, 14 acres. Jurisdiction ceded to United States. Not garrisoned. In charge of ordnance sergeant.

Hamilton, Fort, N. Y.—Latitude, $40^{\circ} 37'$; longitude, $74^{\circ} 1'$. On Long Island, $5\frac{1}{2}$ miles south of New York City, commanding the Narrows. Post-office and telegraph station at post. City railroad from Brooklyn, distant 7 miles. Reservation, 153 acres. Jurisdiction ceded to United States. Accommodations for 19 officers in cottages and 2 in casemates; 4 batteries of artillery. Water supply from Brooklyn waterworks. Sewer system.

Hancock, Fort, Tex.—Latitude, $31^{\circ} 20'$; longitude, $105^{\circ} 55'$. Situated on the Rio Grande, $5\frac{1}{2}$ miles southeast of El Paso and $1\frac{1}{4}$ miles from Hancock Station, on the Southern and Texas Pacific Railroad. Post-office at post. Telegraph and railroad station, Fort Hancock Station, distance $1\frac{1}{4}$ miles from post. Reservation, 469.2 acres. Jurisdiction ceded to United States. Accommodations for 4 officers and 1 troop cavalry. Water pumped from well near the Rio Grande into settling tanks of 37,000 gallons capacity and distributed by iron pipes. Tile drains leading to cesspools; no other sewerage.

Harrison, Fort, Mont.—Latitude, $46^{\circ} 33'$; longitude, $111^{\circ} 58'$. Situated 6 miles from the city of Helena, in Lewis and Clarke County. Reservation, 1,040 acres, acquired by donation, under act of Congress of May 12, 1892. Jurisdiction ceded to United States. Buildings for a two-company post, including water and sewer systems, in course of construction. Not garrisoned.

Huachuca, Fort, Ariz.—Latitude, $31^{\circ} 33'$; longitude, $110^{\circ} 16'$. In Cochise County, 7 miles from Huachuca siding, on the New Mexico and Arizona Railroad. Post-office and telegraph station at post. Daily buckboard from Huachuca siding. Reservation, 70 square miles. Accommodations for 20 officers, 5 troops cavalry, 1 company infantry. Water supply piped from springs 3 miles distant to distributing reservoirs of about 250,000 gallons capacity. Sewer system.

Independence, Fort, Mass.—Latitude, $42^{\circ} 21'$; longitude, 71° . On Castle Island, Boston Harbor, 3 miles from Boston, which is the post-office, telegraph, and railroad station. Government tug from Boston. Reservation, 12 acres. Jurisdiction ceded to United States. Not garrisoned. In charge of ordnance sergeant. Accommodations for 1 field and 6 company officers in cottages outside fort, and for 80 men, 2 batteries, in casemates.

Jackson barracks, La.—Latitude, $29^{\circ} 57'$; longitude, 90° . On the east bank of the Mississippi River, 6 miles below city of New Orleans, which is the post-office and railroad station. Telegraph station, Slaughter House, St. Bernard Parish, La. Street cars from New Orleans pass post. Reservation, 87.87 acres. Jurisdiction believed to be ceded to United States. Accommodations for 11 officers and 2 companies infantry. Water pumped from Mississippi River. Surface drainage by brick-lined drains.

Jackson, Fort, La.—Latitude, $29^{\circ} 21'$; longitude, $89^{\circ} 26'$; 73 miles from New Orleans. Post-office, Neptune, La. Telegraph station, Quarantine, La. Steamer triweekly from New Orleans. Reservation, 740.97 acres. Jurisdiction ceded to United States. Not garrisoned. In charge of ordnance sergeant.

Jefferson barracks, Mo.—Latitude, $38^{\circ} 28'$; longitude, $90^{\circ} 17'$. In South St. Louis, on the Mississippi River, 10 miles from St. Louis. Post-office, telegraph, and railroad station at post. Reservation, 1,379.06 acres, with 118.15 acres in adverse possession by different parties. Jurisdiction ceded to United States. Recruiting depot. Accommodations for 22 officers, 8 companies infantry and band. Water from St. Louis water works. Sewer system.

Jefferson, Fort, Fla.—Latitude, $24^{\circ} 38'$; longitude, $82^{\circ} 52'$; on Garden Key, one of the Tortugas group, being the most southwestern part of the so-called Florida reefs, 71 miles from Key West, which is the post-office and telegraph station, and 500 miles southeast of Fort Barrancas. Boat from Key West to post. Reservation, 5 acres. Jurisdiction believed to be ceded to United States. Not garrisoned. In charge of ordnance sergeant. Two substantial three-story brick buildings; one for officers' quarters, 63 rooms; the other for soldiers, 50 rooms.

Johnston, Fort, N. C.—Latitude, 34° ; longitude, $78^{\circ} 5'$. 22 miles from Wilmington. Post-office and telegraph station, Southport, N. C. Steamer daily from Wilmington. Reservation, 43,560 square feet. Jurisdiction ceded to United States. Not garrisoned. One set of officers' quarters used as signal office. No barracks.

Jeffersonville, Ind.—(General depot, quartermaster's department).—Latitude, $38^{\circ} 16'$; longitude, 86° . Located within the limits of the city, 2 miles from Louisville, Ky., 4 miles from New Albany, Ind. Post-office and telegraph station, Jeffersonville. Reservation, 17½ acres.

Keogh, Fort, Mont.—Latitude, $46^{\circ} 23'$; longitude, $105^{\circ} 57'$. On Northern Pacific Railroad, 747 miles from St. Paul; 2 miles from Miles City. Post-office, telegraph, and railroad station at post. Reservation, about 90 square miles. Jurisdiction ceded to United States. Accommodations for 27 officers, 2 troops cavalry, 7 companies infantry, and band. Water pumped from 2 wells on bank of the Yellowstone River and distributed by direct pressure. Partial sewer system.

Key West barracks, Fla.—Latitude, $24^{\circ} 33'$; longitude, $81^{\circ} 48'$. Post-office, telegraph station, and steamer landing, Key West. Reservation, 22.79 acres. Jurisdiction ceded to United States. Accommodations for 7 officers and 2 batteries of artillery. Water supply from cisterns.

Knox, Fort, Me.—Latitude, $44^{\circ} 34'$; longitude, $68^{\circ} 48'$. Three-fourths of a mile from Bucksport by ferry. Post-office, Prospect Ferry, Me. Telegraph and railroad station, Bucksport. Reservation, 150 acres. Jurisdiction ceded to United States. Not garrisoned. In charge of ordnance sergeant. No quarters for men or officers.

Lafayette, Fort, N. Y. Harbor.—Latitude, $40^{\circ} 37'$; longitude, $74^{\circ} 2'$; 6 miles from Brooklyn. Post-office and telegraph station at post. City railroad from Brooklyn. Reservation, about 2 acres. Jurisdiction ceded to United States. Not garrisoned. In charge of post commander, Fort Hamilton, N. Y.

Leavenworth, Fort, Kans.—Latitude, $39^{\circ} 21'$; longitude, $94^{\circ} 55'$. On Missouri River, 3 miles from Leavenworth City. Post-office, telegraph and railroad station at post. Post reservation, about 5,960 acres; timber reservation, across the river in Missouri, of 939.37 acres. Jurisdiction ceded to United States; but as to timber reservation, no cession. Accommodations for 101 officers, 4 troops cavalry, 6 companies infantry, and 1 light battery. Water supply, Fort Leavenworth Water Company. Sewer system.

Leavenworth Military Prison, Kans.—Latitude, $39^{\circ} 21'$; longitude, $94^{\circ} 55'$. On the Fort Leavenworth Military Reservation. Post-office, telegraph and railroad station, Fort Leavenworth.

Little Rock, Ark. (new post).—Latitude, $34^{\circ} 43'$; longitude, $92^{\circ} 10'$. Site of 1,100 acres, more or less, has been acquired under authority of act of April 23, 1892, and title approved by the Attorney-General. Situated on a bluff 305 feet high, overlooking the valley of the Arkansas River, about $3\frac{1}{4}$ miles above the city of Little Rock. Jurisdiction ceded to United States. Plans for post now being prepared.

Livingston, Fort, La.—Latitude, $29^{\circ} 15'$; longitude, 90° . On Grand Terre Island. Post-office, Grand Isle, La. Telegraph and railroad station, New Orleans. Steamer weekly from New Orleans; distant 95 miles. Reservation, 610 acres. Jurisdiction ceded to United States. Not garrisoned. Transferred to Quartermaster's Department in 1888, and now in charge of light-house keeper.

Logan, Fort, Colo.—Latitude, $39^{\circ} 40'$; longitude, $105^{\circ} 1'$. On Bear Creek, 10 miles from Denver. Post-office, telegraph and railroad station (Denver and Rio Grande) at post. Reservation, 640 acres. Jurisdiction ceded to United States. Accommodations for 28 officers, 2 troops cavalry, and 8 companies infantry. Water supply pumped from two artesian wells to reservoir of 10,000 gallons capacity and distributed through pipes. Sewer system.

Mackinac, Fort, Mich.—Latitude, $45^{\circ} 51'$; longitude, $81^{\circ} 41'$. On Mackinac Island, in the Straits of Mackinac, overlooking the village of Mackinac. Post-office and telegraph station, Mackinac Island, Mich. Boat from Mackinac City (11 miles) and from St. Ignace (5 miles). Steamers from Chicago, Detroit, and other lake ports daily. Military reservation proper, 103.41 acres. No special cession of jurisdiction. Cession, perhaps, embraced in general provisions of State act of March 24, 1874. National park, under immediate control of military authorities, 821 acres. Accommodations for 7 officers and 1 company infantry. Water pumped from springs to reservoir of 16,000 gallons capacity, thence distributed. Sewer system.

Macomb, Fort, La.—Latitude, $30^{\circ} 5'$; longitude, $89^{\circ} 51'$. One and one-half miles from Chef Menteur. Post-office, Lee, La. Telegraph station, Chef Menteur, La. Reservation, 1,364.71 acres. Jurisdiction believed to be ceded to United States. Not garrisoned. In charge of ordnance sergeant. Measures being taken to lease reservation.

Macon, Fort, N. C.—Latitude, $30^{\circ} 41'$; longitude, $76^{\circ} 40'$. Two miles from Beaufort and Morehead City. Post-office, Beaufort, N. C. Telegraph and railroad station, Morehead City. Reservation, $1\frac{1}{4}$ square miles. Jurisdiction ceded to United States. Not garrisoned. In charge of ordnance sergeant. Four sets of officers' quarters and 2 sets of noncommissioned officers' quarters, all in bad condition.

Madison barracks, N. Y.—Latitude, $43^{\circ} 57'$; longitude, $76^{\circ} 15'$. On south shore of Black River Bay, about 10 miles from Lake Ontario, adjoining town of Sackets Harbor, which is the post-office, telegraph and railroad station. Reservation, $34\frac{1}{2}$ acres. In addition to which about 52 acres have been acquired under provision of act of March 2, 1889. Jurisdiction ceded to United States. Accommodations for 26 officers, 8 companies infantry, and band. Water pumped from Henderson Bay to a standpipe of 52,000 gallons capacity, on reservation; pipe distribution; sewer system. NOTE.—United States also owns small lot of about $\frac{1}{4}$ acre near corner of Main and Hill streets, Sackets Harbor.

Marcy, Fort, N. Mex.—Latitude, $35^{\circ} 41'$; longitude, $105^{\circ} 57'$. On branch of Atchison, Topeka and Santa Fe Railroad. Situated in the city of Santa Fe, which is the post-office, telegraph and railroad station. Reservation, about $17\frac{1}{2}$ acres. Accommodations for 9 officers and 2 companies infantry. Water supplied by Santa Fe Water Company. Partial sewer system.

Marion, Fort, Fla.—Latitude, $29^{\circ} 53'$; longitude, $81^{\circ} 17'$. Situated in the city of St. Augustine, Fla., which is the post-office, telegraph and railroad station. Reservation, about $22\frac{1}{2}$ acres. Jurisdiction ceded to United States. Not garrisoned. In charge of post commander St. Francis barracks.

Mason, Fort, Cal.—Latitude, $37^{\circ} 1'$; longitude, $122^{\circ} 20'$. At Point San Jose or Black Point, on San Francisco Bay, within the city limits of San Francisco. Post-office, Station A, San Francisco. Telegraph station at post. Railroad station, San Francisco; distance, 3 miles. Cable cars to post. Reservation, $55\frac{1}{2}$ acres. Jurisdiction ceded to United States. Accommodations for 1 department commander, 5 officers, and 1 battery of artillery. Water supply from the Spring-Valley Water Company. Sewer system.

McClary, Fort, Me.—Latitude, $43^{\circ} 5'$; longitude, $70^{\circ} 45'$. On Kittery Point, Me., $3\frac{1}{4}$ miles from Portsmouth, N. H. Post-office, telegraph and railroad station, Kittery Point, Me. Reservation, 15 acres. Jurisdiction ceded to United States. Not garrisoned. In charge of ordnance sergeant.

McHenry, Fort, Md.—Latitude, $39^{\circ} 15'$; longitude, $76^{\circ} 35'$. On Whetstone Point, in the city of Baltimore, which is the post-office, telegraph and railroad station. Reservation, $34\frac{1}{2}$ acres. Electric cars to post. Jurisdiction ceded to United States.

Accommodations for 10 officers and 3 batteries of artillery. Water supply from Baltimore City waterworks. Sewer system.

McIntosh, Fort, Tex.—Latitude, $27^{\circ} 30'$; longitude, $99^{\circ} 29'$. In Webb County, on the Rio Grande, 1 mile from Laredo, which is the post-office, telegraph and railroad station. Reservation, about 208 acres. Jurisdiction ceded to United States. Accommodations for 12 officers, 2 troops cavalry, and 1 company infantry. Water pumped from well on bank of Rio Grande to 2 elevated tanks of 30,000 gallons total capacity, thence distributed through pipes. Surface drainage.

McKinney, Fort, Wyo.—Latitude, $44^{\circ} 23'$; longitude, $106^{\circ} 46'$. On Clear Fork of Powder River, at base of Big Horn Mountains, 148 miles from Douglas City, on Fremont, Elkhorn and Missouri Valley Railroad. One hundred and sixty miles from Custer Station, Mont., on Northern Pacific Railroad, and 32 miles from Clearmont, on Chicago, Burlington and Quincy Railroad. Daily stage from each. Post-office and telegraph station at post. Reservation, 39 square miles. Jurisdiction ceded to United States. Accommodations for 20 officers, 4 troops cavalry, and 2 companies infantry. Water pumped from Clear Fork of Powder River into a tank of 29,000 gallons capacity, thence distributed. Surface drainage.

McPherson, Fort, Ga.—Latitude, $33^{\circ} 48'$; longitude, $84^{\circ} 31'$. Situated south of and 4 miles from the center of the city of Atlanta, Ga., which is the post-office, telegraph and railroad station. Reservation, 236.41 acres. Jurisdiction ceded to United States. Accommodations for 30 officers, 8 batteries of artillery, and band. Water supply pumped from 2 nonflowing artesian wells to elevated tanks of 45,000 gallons total capacity, thence distributed. Sewer system.

Meade, Fort, S. Dak.—Latitude, $44^{\circ} 25'$; longitude, $103^{\circ} 28'$. In Meade County, 2 miles from Sturgis, on the Fremont, Elkhorn and Missouri Valley Railroad, and 797 miles from St. Paul. Post-office at post. Telegraph and railroad station, Sturgis, S. Dak. Post reservation, about $12\frac{1}{2}$ square miles. Wood and timber reservation of 27,293 acres. Jurisdiction ceded to United States. Small addition to reservation purchased in 1889 for increasing water supply. Accommodations for 23 officers, 8 troops cavalry, 2 companies infantry, and band. Water supply from springs is pumped into a reservoir of 94,000 gallons capacity, thence distributed. Surface drainage.

Mifflin, Fort, Pa.—Latitude, $39^{\circ} 53'$; longitude, $75^{\circ} 13'$. On Mud Island, Delaware River, 5 miles from Philadelphia, which is the post-office, telegraph and railroad station. Reservation, about 317 acres. Jurisdiction ceded to United States. Not garrisoned. In charge of ordnance sergeant.

Missoula, Fort, Mont.—Latitude, $46^{\circ} 50'$; longitude, $114^{\circ} 50'$. On Bitter Root River, 1 mile from Bitter Root, on the Missouri and Bitter Root Valley branch of the Northern Pacific Railroad, 4 miles from Missoula, Mont., on the Northern Pacific Railroad, and 1,254 miles from St. Paul. Post-office at post; telegraph and railroad (Northern Pacific) station, Missoula. Reservation, 640 acres, and 560 acres, not reserved, held by military occupancy. Post not on reservation. Wood and timber reserve, 1,677.41 acres, 6 miles southeast of post. No cession of jurisdiction. Accommodations for 13 officers and 4 companies infantry. Water pumped from Bitter Root River and distributed through pipes by direct pressure or from a tank of 27,000 gallons capacity. Surface drainage.

Monroe, Fort, Va.—Latitude, 37° ; longitude, $76^{\circ} 18'$. Situated at Old Point Comfort, commanding the entrance to Hampton Roads. Post-office and telegraph station at post. Steamers daily from Baltimore, Washington, Norfolk, and New York; railroad (Chesapeake and Ohio) from Richmond. Reservation, about 267 acres. Jurisdiction ceded to United States. Cession does not include the 15 acres in Elizabeth City County acquired February 12, 1841, for a pumping station. Accommodations for 39 officers in cottages and 14 in casemates, 8 batteries of artillery, and band. Water pumped from a system of driven wells located near post. Sewer system constructed by engineers considered defective. Act of March 2, 1889, appropriated \$25,000 for new sewer system, but no action has been taken so far as known.

Montgomery, Fort, N. Y.—Latitude, 45° ; longitude, $73^{\circ} 20'$. Situated on Rouse's Point, N. Y., 191 miles from Albany, N. Y. Post-office, telegraph and railroad station, Rouse Point, N. Y., $1\frac{1}{2}$ miles from post. Reservation, 600 acres. Jurisdiction ceded to United States. Not garrisoned. In charge of ordnance sergeant.

Morgan, Fort, Ala.—Latitude, $30^{\circ} 14'$; longitude, 88° . Situated on Mobile Point, 30 miles from Mobile. Post-office, Herndon, Ala. Telegraph station at the post. Steamer from Mobile. Reservation, 322.42 acres. Jurisdiction ceded to United States. Not garrisoned. In charge of ordnance sergeant.

Moultrie, Fort, S. C.—Latitude, $32^{\circ} 45'$; longitude, $79^{\circ} 51'$. On Sullivan's Island, 5 miles from Charleston. Post-office, Moultrieville, S. C. Telegraph and railroad station, Charleston, S. C. No reservation; 4 acres held. Jurisdiction ceded to United States. Not garrisoned. In charge of ordnance sergeant.

Merritt, Camp, Mont.—A substation of Fort Keogh, Mont., 60 miles from Rosebud on Northern Pacific Railroad; 776 miles from St. Paul. Stage leaves station three

times a week for Tongue River Agency. Camp is 60 miles from Fort Custer and 90 miles from Fort Keogh. Accommodations for 2 officers; 1 barrack. Spring water. No sewer system.

Mount Vernon barracks, Ala.—Latitude, $31^{\circ} 12'$; longitude, $88^{\circ} 2'$. In town of Mount Vernon, 30 miles north of Mobile. Post-office, telegraph and railroad station, Mount Vernon, Ala., $\frac{1}{4}$ mile from post. Reservation, about 1,600 acres. Jurisdiction ceded to United States. Accommodations for 11 officers and 2 companies infantry. Water supply raised by steam pump from reservoir of 35,000 gallons capacity fed by springs and thence distributed. Sewer system.

Myer, Fort, Va.—Latitude, $38^{\circ} 53'$; longitude, $77^{\circ} 3'$. On Arlington Heights, 4 miles from the Capitol building, Washington, D. C., which is the post-office and railroad station. Telephone to post from city. Post reservation, 186 acres (a portion of the Arlington estate, the area of which is 1,073.4 acres). Jurisdiction ceded to United States. Accommodations for 14 officers and 4 troops cavalry. Sewer system. Water raised by steam from wells and Potomac River into 4 tanks of total capacity 70,000 gallons, thence distributed.

New York City, N. Y.—General depot, quartermaster department. Latitude, $40^{\circ} 42'$; longitude, $73^{\circ} 59'$. Located in "Army building," owned by United States, corner Whitehall and Pearl streets. Post-office and telegraph station, New York City. Reservation, 8,000 square feet.

Newport barracks, Ky.—Latitude, $39^{\circ} 5'$; longitude, $84^{\circ} 29'$. On south bank of the Ohio River, at the junction of the Licking River, in the city of Newport. Post-office, telegraph, and railroad station, Newport. Reservation, about 6 acres. Jurisdiction ceded to United States. Accommodations for 5 officers and 2 companies infantry. Congress has authorized transfer to city for park purposes. Water supply from Newport city waterworks. Sewer system.

Niagara, Fort, N. Y.—Latitude, $43^{\circ} 18'$; longitude, $79^{\circ} 8'$. On the Niagara River, at its junction with Lake Ontario, 14 miles below Niagara Falls, 7 miles from Lewiston, N. Y., which is the railroad station. Post-office and telegraph station, Youngstown, N. Y. Reservation, 288 $\frac{1}{2}$ acres. Jurisdiction ceded to United States. Accommodations for 13 officers and 4 companies of infantry. Water pumped from the Niagara River into tank of 30,000 gallons capacity, thence distributed. Sewer system.

Niobrara, Fort, Nebr.—Latitude, $42^{\circ} 53'$; longitude, $100^{\circ} 46'$. On the Niobrara River, 4 miles from Valentine, on the Fremont, Elkhorn and Missouri Valley Railroad. Post-office at post. Telegraph and railroad station, Valentine, Nebr. Reservation, 54 square miles, 452 acres. Jurisdiction ceded to United States. Accommodations for 25 officers, 6 troops cavalry, and 3 companies infantry. Water from springs is pumped into tanks of 35,000 gallons total capacity and distributed by gravity. Sewer system.

Oglethorpe, Fort, Ga.—Latitude, $32^{\circ} 2'$; longitude, $80^{\circ} 34'$. On west bank of the Savannah River, 3 miles below the city of Savannah, which is the post-office, telegraph and railroad station. Reservation, 200 feet on the Savannah River, running back 345 feet. Jurisdiction ceded to United States. Not garrisoned. In charge of ordnance sergeant.

Omaha, Fort, Nebr.—Latitude, $41^{\circ} 20'$; longitude, 96° . On Fremont, Elkhorn and Missouri Valley Railroad, 4 miles from Webster Street depot, within the limits of city of Omaha. Post-office and telephone at post. Railroad station, Omaha. Reservation (old), 82.50 acres. Accommodations for 25 officers and 11 companies infantry. Water from American Waterworks Company. Partial sewer system. Act of July 23, 1888, authorized sale of Fort Omaha and purchase of a new site of not less than 320 nor more than 640 acres. (General Orders, No. 60, of 1888.) (See Fort Crook.)

Omaha Depot, Nebr.—Latitude, $41^{\circ} 20'$; longitude, 96° . In Omaha City. Reservation, 5 acres.

Oswego, Fort, N. Y.—Latitude, $43^{\circ} 27'$; longitude, $76^{\circ} 30'$. On Oswego River, at its junction with Lake Ontario, adjoining the city of Oswego, which is the post-office, telegraph and railroad station. Reservation about 76 acres. Jurisdiction ceded to United States. Accommodations for 4 officers and 1 company infantry. Water supply from Oswego waterworks. Sewer system.

Pembina, Fort, N. Dak.—Latitude, $48^{\circ} 57'$; longitude, $97^{\circ} 12'$. On Red River of the North, 2 miles from Pembina, on the Winnipeg branch of the Northern Pacific Railroad, 416 miles from St. Paul. Post-office, telegraph and railroad station, Pembina. Reservation about 1,920 acres. Jurisdiction ceded to United States. Accommodations for 7 officers and 2 companies infantry. Water pumped to tank of 30,000 gallons capacity, thence distributed. Surface drainage.

Phoenix, Fort, Mass.—Latitude $41^{\circ} 38'$; longitude, $70^{\circ} 55'$. At Fort Point, Mass. Post-office, telegraph and railroad station, Fairhaven, Mass. Reservation, 2 acres. Jurisdiction not ceded to United States. Not garrisoned. In charge of ordnance sergeant.

Pickens, Fort, Fla.—Latitude, $30^{\circ} 19'$; longitude, $87^{\circ} 17'$. On Santa Rosa Island, 10 miles from Pensacola. Post-office, Warrington, Fla. Telegraph station, Pensacola navy-yard. Railroad station, Pensacola. Reservation, all of Santa Rosa Island (unsurveyed). Jurisdiction ceded to United States. Not garrisoned. In charge of ordnance sergeant.

Pike, Fort, La.—Latitude, $30^{\circ} 11'$; longitude, $89^{\circ} 38'$. On Petites Coquille Island, 7 miles from Lake Catherine Station, on the Louisville and Nashville Railroad. Post-office at the post. Telegraph station, Millers Bayou, La. Reservation, all the public land within 1,200 yards of the post. Jurisdiction ceded to United States. Not garrisoned. In custody of Quartermaster's Department (General Orders, No. 119, of 1890).

Pittsburg, Pa.—Latitude, $40^{\circ} 32'$; longitude, $80^{\circ} 5'$. Reservation part of old site of Fort Fayette. Front over 100 feet on Penn street, running back to the Allegheny River. The sale authorized by act of May 21, 1890, (Public No. 125.) not yet effected.

Pilot Butte, Camp, Wyo.—Latitude, $41^{\circ} 12'$; longitude, 111° . Post-office, telegraph and railroad station, Rock Springs, Wyo., on Union Pacific Railroad. No reservation. Jurisdiction ceded to United States. Accommodations for 6 officers and 2 companies infantry. Buildings belong to, and are kept in repair by, the Union Pacific Railroad Company. Water furnished by Green River Water Company and paid for by the Union Pacific Railroad Company.

Plattsburg barracks, N. Y.—Latitude, $44^{\circ} 41'$; longitude, $73^{\circ} 25'$. On west shore of Lake Champlain, at the town of Plattsburg. Post-office, telegraph and railroad station, Plattsburg, N. Y. Reservation, about 173 acres. Jurisdiction ceded to United States. In addition to which 506.35 acres have been acquired under the provisions of act of February 7, 1891. Accommodations for 26 officers and 8 companies infantry. Water from Plattsburg waterworks. Sewer system.

Popham, Fort, Me.—Latitude, $43^{\circ} 50'$; longitude, $69^{\circ} 55'$. On Hunniwell Point, 12 miles by water and 15 by land from Bath. Post-office, Popham Beach, Me. Telegraph and railroad station, Bath. Reservation, $2\frac{1}{4}$ acres. Jurisdiction ceded to United States. Not garrisoned. In charge of ordnance sergeant.

Porter, Fort, N. Y.—Latitude, $42^{\circ} 53'$; longitude, $78^{\circ} 52'$. On right bank of the Niagara River, within the limits of the city of Buffalo, which is the post-office, telegraph and railroad station. Reservation about $28\frac{1}{4}$ acres. Jurisdiction ceded to United States. Accommodations for 9 officers and 2 companies infantry. Water from Buffalo city waterworks. Sewer system.

Preble, Fort, Me.—Latitude, $43^{\circ} 3'$; longitude, $70^{\circ} 14'$. On east side of Portland Harbor at Spring Point, 2 miles from city of Portland, which is the post-office, telegraph and railroad station. Reservation, about 24 acres. Jurisdiction ceded to United States. Accommodations for 5 officers and 1 battery of artillery. Water from Sebago Water Company. Sewer system.

Presidio of San Francisco, Cal.—Latitude, $37^{\circ} 47'$; longitude, $122^{\circ} 26'$. In the northwestern suburbs of San Francisco. Post-office and telegraph station at post. Railroad station, San Francisco, 5 miles from post. City railway to post. Reservation, 1,479.94 acres. Jurisdiction ceded to United States. Accommodations for 39 officers, 4 troops cavalry, 1 light battery, 4 batteries of artillery and band. Water from the Spring Valley Water Company, pumped by steam power and windmills, to reservoirs of 553,500 gallons total capacity. Efforts are now being made to secure water by driven wells, etc., near Mountain Lake. Sewer system.

Pulaski, Fort, Ga.—Latitude, $32^{\circ} 2'$; longitude, $80^{\circ} 34'$. On Cockspur Island, 14 miles from Savannah, which is the post-office, telegraph and railroad station. Reservation not surveyed. Jurisdiction ceded to United States. Not garrisoned. In charge of ordnance sergeant.

Red Bank, N. J.—Latitude, $40^{\circ} 25'$; longitude, $74^{\circ} 1'$. On east shore of Delaware River, 8 miles below Philadelphia. Reserve, 100 acres. Jurisdiction ceded to United States.

Reno, Fort, Okla.—Latitude, $35^{\circ} 35'$; longitude, $98^{\circ} 1'$. On North Fork of Canadian River, 32 miles from Oklahoma Station, on Atchison, Topeka and Santa Fe Railroad. Post-office and telegraph station at post. Daily stage from El Reno, Okla., on Chicago, Rock Island and Pacific Railroad, $5\frac{1}{4}$ miles from post. Reservation, 9,493 acres and wood reserve of 9 square miles. Accommodations for 18 officers, 4 troops cavalry, 3 companies infantry. Water pumped from North Fork of Canadian River into wooden tanks of 64,000 gallons total capacity, thence distributed. The water is generally muddy and alkaline. For domestic purposes water is hauled from Caddo Springs. Test wells are now being sunk with view of securing water by system of driven wells. Sewer system.

Riley, Fort, Kans.—Latitude, $39^{\circ} 4'$; longitude, $96^{\circ} 47'$. On Kansas River, $3\frac{1}{4}$ miles from Junction City, on the Kansas Division Union Pacific Railroad. Post-office, telegraph and railroad stations at the post. Reservation, 19,899.22 acres. Jurisdiction ceded to United States. Accommodations for 49 officers, 2 light batteries, 8 troops cavalry, and 4 companies infantry. Water pumped from 8 Wagner tubular wells to reservoir of 500,000 gallons capacity, thence distributed. Sewer system.

Ringgold, Fort, Tex.—Latitude, $26^{\circ} 23'$; longitude, $98^{\circ} 47'$. On Rio Grande, 23 miles from San Miguel, on Mexican National Railroad. Post-office, Rio Grande City, Tex. Telegraph station at the post. Stage from Brownsville, 117 miles; from Pena, 76 miles, on Texas Midland Railroad, and from San Miguel, Mexico. Reservation, 350 acres. Jurisdiction ceded to United States. Accommodations for 11 officers, 2 troops cavalry, 2 companies infantry. Water pumped from Rio Grande to 4 reservoirs; total capacity, 64,000 gallons; thence distributed through pipes. Sewer system.

Robinson, Fort, Nebr.—Latitude, $42^{\circ} 40'$; longitude, $103^{\circ} 28'$. On White River, on line of Fremont, Elkhorn and Missouri Valley Railroad, 3 miles from Crawford, on Burlington and Missouri River Railroad. Post-office, telegraph and railroad station at the post. Post reserve, 20 square miles. Wood and timber reserve, 16 square miles. Jurisdiction ceded to United States. Accommodations for 37 officers, 6 troops cavalry, and 5 companies infantry. Water pumped from springs to an elevated tank of 95,000 gallons capacity, thence distributed. Sewer system.

St. Francis barracks, Fla.—Latitude, $29^{\circ} 53'$; longitude, $81^{\circ} 17'$. Southeast of and adjoining St. Augustine, Fla., on Matanzas River. Post-office, telegraph and railroad station, St. Augustine. Reservation proper, about $5\frac{1}{2}$ acres. Powder-house lot, about 11 acres. In addition to which two islands in the Matanzas River were reserved by Executive authority of May 31, 1892, containing 1.96 and 0.04 acres respectively, and about 700 acres on Anastasia Island, by Executive authority of May 4, 1893. Jurisdiction ceded to United States. Accommodations for 9 officers, 2 companies infantry, and band. Water raised from an artesian well by hydraulic ram; 5 cisterns also in use. Sewer system.

St. Louis arsenal, Mo.—Latitude, $38^{\circ} 30'$; longitude, $90^{\circ} 15'$. In the city of St. Louis, on the Missouri River. Reservation, 31.8 acres. St. Louis clothing depot. Water supply from city waterworks.

St. Philip, Fort, La.—Latitude, $29^{\circ} 25'$; longitude, $89^{\circ} 30'$. Post-office, Neptune, La.; telegraph station, Quarantine, La. Steamer triweekly from New Orleans, 73 miles, and from Bohemia, on New Orleans and Gulf Railroad, distance, 25 miles. Reservation, 640 acres. Jurisdiction ceded to United States. Not garrisoned. In charge of ordnance sergeant.

Sam Houston, Fort, Tex.—Latitude, $29^{\circ} 27'$; longitude, $98^{\circ} 28'$. In Bexar County, 2 miles north of San Antonio, which is the post-office, telegraph and railroad stations. Reservation, 469.23 acres. Jurisdiction ceded to United States. Accommodations for 34 officers, 3 troops cavalry, 8 companies infantry, 1 light battery. Headquarters Department of Texas has accommodations for 15 officers. Water supply, San Antonio Water Company. Drainage by means of a system of vitrified pipes.

San Carlos, Ariz.—Latitude, $33^{\circ} 10'$; longitude, $110^{\circ} 25'$. On Gila River, within limits of White Mountain Indian Reservation, 105 miles from Bowie and 106 miles from Wilcox, on the Southern Pacific Railroad. Post-office and telegraph station at post. Daily stage, except Sunday, from Bowie via Forts Grant and Thomas. Temporary accommodations for 12 officers, 2 troops cavalry, and 1 company infantry. Water pumped from well near San Carlos River into 2 tanks of 19,000 gallons capacity each, distributed. Natural drainage.

San Diego barracks, Cal.—Latitude, $32^{\circ} 43'$; longitude, $117^{\circ} 9'$. In city of San Diego, Cal. Post-office, telegraph, railroad station, and boat landing, San Diego. Reservation, 2 blocks, 200 by 300 each, and wharf lot, 75 by 1,000. Jurisdiction ceded to United States. Accommodations for 1 company infantry. Water from San Diego Water Company. Sewer system connected with city sewers.

Sandy Hook, Fort at, N. J.—Latitude, $40^{\circ} 25'$; longitude, $74^{\circ} 1'$. Post-office, New York City; distance, 23 miles. Telegraph, railroad station, and steamboat landing at Sandy Hook; distance, 2 miles. Reservation, about 1,366 acres. Jurisdiction ceded to United States. Water obtained from wells. Not garrisoned. In charge of ordnance sergeant.

San Juan Island, Wash.—Latitude, $48^{\circ} 37'$; longitude, 123° . In Archipelago de Haro, between the mainland of the State of Washington and Vancouver Island. Reservation, about 640 acres. Jurisdiction not ceded to United States.

San Pedro, Cal.—Latitude, $33^{\circ} 40'$; longitude, $118^{\circ} 40'$. In San Pedro Bay. Reservation, 44.25 acres, more or less.

Scammel, Fort, Me.—Latitude, $43^{\circ} 39'$; longitude, $79^{\circ} 13'$. In Portland Harbor, 2 miles from Portland, which is the post-office, telegraph, and railroad station. Reservation, 11 acres. Jurisdiction ceded to United States. Not garrisoned. In charge of ordnance sergeant.

Schuyler, Fort, N. Y.—Latitude, $40^{\circ} 49'$; longitude, $73^{\circ} 48'$. On Throgs Neck, $3\frac{1}{4}$ miles from West Chester, and 17 miles from New York City. Post-office, telegraph and railroad station, West Chester, N. Y. Reservation, 52 acres. Cession of jurisdiction, none or doubtful. State act of March 31, 1815, apparently authorizes cession to be made by commissioner's deed, but no record of deed is found. State act of May 7, 1880, cedes as to water-covered lands only. Accommodations for 9 officers

and 2 batteries artillery. Water supply from New York and West Chester Water Company. Sewer system.

Schuylkill arsenal, Pa.—General depot Quartermaster Department. Latitude, 40° ; longitude, 75° . Within limits of the city of Philadelphia, which is the post-office and telegraph station. Reservation, $8\frac{1}{4}$ acres.

Sequoia National Park, Cal. (Camp at Mineral King).—Post-office, Three Rivers, Cal. Telegraph station, Visalia, Cal. Private conveyance to camp from Exeter Station, 48 miles, on Southern Pacific Railroad. Present garrison, 1 troop cavalry.

Sewall, Fort, Mass.—Latitude, $42^{\circ} 30'$; longitude, $70^{\circ} 33'$. Situated $1\frac{1}{4}$ miles from Marblehead, which is the post-office, telegraph, and railroad station. Reservation, small tract and in litigation. Not garrisoned. In charge of town of Marblehead, Mass., by authority of act of Congress, (Public, No. 19 of 1890).

Sheridan, Fort, Ill.—Latitude, $42^{\circ} 14'$; longitude, $89^{\circ} 30'$. At town of Highwood, on Chicago and Northwestern railroad, 24 miles north of Chicago. Post-office, telegraph and railroad station at post. Reservation, 632 $\frac{1}{4}$ acres. Jurisdiction ceded to United States. Accommodations for 49 officers, 2 light batteries, 2 troops cavalry, and 8 companies infantry. Water supply pumped from Lake Michigan into reservoir of 100,000 gallons capacity, thence distributed. Sewer system.

Sherman, Fort, Idaho.—Latitude, $47^{\circ} 42'$; longitude, $116^{\circ} 38'$. Four hundred and fourteen miles from Vancouver barracks, Wash. On Cœur d'Alene Lake, at its outlet, Spokane River, one-half mile from the Cœur d'Alene branch of Northern Pacific Railroad. Post-office, Sherman; telegraph and railroad station, Cœur d'Alene, Idaho. Reservation, 688.65 acres. Jurisdiction ceded to United States. Accommodations for 18 officers, 1 troop cavalry, 4 companies infantry, and band. Water pumped from Spokane River into a tank of 23,500 gallons capacity, thence distributed. No sewer system.

Ship Island, Fort at, Miss.—Latitude, $30^{\circ} 20'$; longitude, $89^{\circ} 7'$. Situated 15 miles from Biloxi, which is on the Louisville and Nashville Railroad. Post-office, telegraph and railroad station, Biloxi, Miss. Special boat to post. No cession of jurisdiction. Not garrisoned. In charge of ordnance sergeant.

Sidney, Fort, Nebr.—Latitude, $41^{\circ} 9'$; longitude, $102^{\circ} 58'$. On Lodge Pole Creek, adjoining the town of Sidney, Cheyenne County, on the Union Pacific Railroad. Post-office, telegraph and railroad station, Sidney, Nebr. Post reservation, 1 square mile. Timber reservation, 5 square miles. Jurisdiction ceded to United States. Accommodation for 15 officers; 5 barracks. Water pumped from a well to a tank of 40,000 gallons capacity, thence distributed. Surface drainage. Post abandoned. In charge of custodian.

Sill, Fort, Okla.—Latitude, $34^{\circ} 40'$; longitude, $98^{\circ} 23'$. On Medicine Bluff Creek, 65 miles from Henrietta, Tex., on Denver and Fort Worth Railroad. Post-office and telegraph station at post. Daily stage, except Sunday, from Rush Springs, Ind. T., on the Chicago, Rock Island and Pacific Railroad, distant 28 miles. On Indian lands, 36 square miles reserved. In addition to which General Order 43, 1892, sets aside a wood reserve of 26,880 acres. Accommodations for 20 officers, 8 companies cavalry, and band. Water raised by steam pump from a reservoir fed by springs on Medicine Bluff Creek and distributed from 3 tanks of total capacity of 52,000 gallons by a system of pipes. Sewer system.

Snelling, Fort, Minn.—Latitude, $44^{\circ} 53'$; longitude, $93^{\circ} 11'$. At junction of Minnesota and Mississippi rivers, on Chicago, Milwaukee and St. Paul Railroad, 7 miles from St. Paul, and 8 miles from Minneapolis by the course of the river. Post-office, telegraph and railroad station at the post. Reservation, 1,531.21 acres. Jurisdiction ceded to United States. Accommodations for 36 officers and 8 companies infantry. Water pumped from a spring by steam pump and distributed from reservoir of 50,000 gallons capacity. Sewer system.

Spokane, Fort, Wash.—Latitude, $47^{\circ} 50'$; longitude, $118^{\circ} 18'$; 458 miles from Vancouver barracks. On the Spokane River, three-fourths of a mile from its junction with the Columbia, near Miles, Wash., 25 miles from Davenport and 50 miles from Sprague, on Northern Pacific Railroad. Post-office and telegraph station, Miles, Wash. Daily stage, except Sunday, from Davenport. Reservation, 640 acres. Jurisdiction ceded to United States. Accommodations for 19 officers, 1 troop cavalry, and 5 companies infantry. Water pumped from Spokane River into a reservoir of 150,000 gallons capacity, except that for drinking purposes, which is supplied from a spring to a reservoir of 61,600 gallons capacity, thence distributed. Sewer system.

Stanton, Fort, N. Mex.—Latitude, $33^{\circ} 30'$; longitude, $105^{\circ} 32'$. On Rio Bonito, Lincoln County, 8 miles from Lincoln, 100 miles from Carthage, and 108 miles from San Antonio, on Atchison, Topeka and Santa Fe Railroad. Post-office and telegraph station at post. Daily stage from Carthage. Reservation, 16 square miles. Accommodations for 13 officers, 3 troops cavalry, 2 companies infantry. Water pumped from well about 100 feet from Rio Bonito and distributed from 2 reservoirs of 40,000 gallons total capacity. Partial sewer system.

Stevens, Fort, Oreg.—Latitude, $46^{\circ} 31'$; longitude, $125^{\circ} 1'$. On Point Adams, Columbia River, 7 miles from Astoria and 105 from Portland. Post-office, telegraph station, Astoria, Oreg., telephone to post. Steamer daily from railroad station, Portland to Astoria, thence by steam tug daily, except Sunday, to post. Reservation, 640 acres. No cession of jurisdiction. Not garrisoned. Transferred to Engineer Department and in charge of ordnance sergeant. Four sets officers' quarters and 1 barrack.

Sully, Fort, S. Dak.—Latitude, $44^{\circ} 20'$; longitude, $100^{\circ} 10'$. On Missouri River, 23½ miles from Pierre, on the Chicago, St. Paul, Minneapolis and Omaha Railroad, 415 miles from St. Paul and 781 miles from Chicago. Post-office and telegraph station at the post. Railroad station, Pierre. Daily stage, except Sunday, to post. Reservation, about 27,000 acres. Jurisdiction ceded to United States. Accommodations for 13 officers and 4 companies infantry. Water pumped from a drive-well gallery, 1 mile from the Missouri River, to a tank of 35,000 gallons capacity and thence distributed. Surface drainage.

Sumter, Fort, S. C.—Latitude, $32^{\circ} 45'$; longitude, $79^{\circ} 51'$. In Charleston Harbor, 5 miles from Charleston. Post-office, Montrieville, S. C. Telegraph and railroad station, Charleston. Reservation, about 125 acres. Jurisdiction ceded to United States. Not garrisoned. In charge of ordnance sergeant.

Supply, Fort, Ind. T.—Latitude, $36^{\circ} 30'$; longitude, $99^{\circ} 30'$; 15 miles from Woodward, on the Atchison, Topeka and Santa Fe Railroad. Post-office and telegraph station at post. Railroad station, Woodward. Daily stage to post. Post reservation, 36 square miles; wood and water reservation, 27 square miles, all on Indian lands. Accommodations for 17 officers, 3 troops cavalry, and 4 companies infantry. Water from springs on Water Cress Canyon, about 2½ miles north of post, piped to a reservoir of 80,000 gallons capacity; thence distributed. Sewer system.

Taylor, Fort, Fla.—Latitude, $24^{\circ} 33'$; longitude, $81^{\circ} 49'$. Near Whitehead Point, 1 mile from Key West, which is the post-office, telegraph station, and boat landing. Reservation, 62.89 acres. Jurisdiction ceded to United States. Not garrisoned. In charge of ordnance sergeant.

Thomas, Fort, Ky.—Latitude, $39^{\circ} 5'$; longitude, $84^{\circ} 29'$; 3 miles from Newport, on highlands overlooking the Ohio River, 4 miles from Cincinnati. Post-office, telegraph and railroad station, Newport. Reservation, 111 acres 2 roods 39 poles. Rifle range, 169 acres. Jurisdiction ceded to United States. Accommodations for 29 officers, 8 companies infantry, and band. Water supplied by Covington city waterworks. Sewer system.

Townsend, Fort, Wash.—Latitude, $48^{\circ} 7'$; longitude, $122^{\circ} 44'$. At the entrance to Puget Sound, 3 miles from Port Townsend, 66 miles from Seattle, 93 from Tacoma, 130 from Olympia, and 226 from Vancouver barracks. Post-office and telegraph station, Port Townsend. Reservation, 615.1 acres. Jurisdiction ceded to United States. Accommodations for 5 officers and 1 company infantry. Water pumped from springs by steam power to a tank of 30,000 gallons capacity; gravity distribution. Natural drainage.

Trumbull, Fort, Conn.—Latitude, $41^{\circ} 21'$; longitude, $72^{\circ} 6'$. On right bank of the Thames River, 1 mile below city of New London, which is the post-office, telegraph and railroad station. Reservation, 13½ acres. Jurisdiction ceded to United States. Accommodations for 4 officers in cottages and 4 in casemates, 1 battery of artillery. Water supply from New London city waterworks. Sewer system.

Union, Fort, N. Mex.—Latitude, $35^{\circ} 54'$; longitude, $105^{\circ} 9'$. In Moro County, 9 miles from Watrous, on the Atchison, Topeka and Santa Fe Railroad. Reservation and buildings totally abandoned by the United States April 1, 1894, ground not belonging to the Government and buildings having no value.

Vancouver barracks, Wash.—Latitude, $45^{\circ} 40'$; longitude, $125^{\circ} 32'$. On north bank of the Columbia River. Daily boat from Portland, distance 18 miles, or by ferries and electric line, distance 6 miles. Telegraph station at post. Post-office and steam-boat landing at Vancouver. Reservation, 640 acres. Jurisdiction ceded to United States. Accommodations for 26 officers, 1 troop cavalry, 8 companies infantry and band. Accommodations for 12 officers at department headquarters. Water pumped from an artesian well to a reservoir of 528,000 gallons capacity, thence distributed by gravity. Sewer system.

Wadsworth, Fort, N. Y. Harbor.—Latitude, $40^{\circ} 37'$; longitude, $74^{\circ} 3'$. On Staten Island, commanding the Narrows, entrance to New York Harbor. Post-office, Rosebank, Staten Island, N. Y. Telegraph station, quarantine, Clifton, Staten Island. Railroad station, St. George, N. Y. Reservation, about 100 acres. Jurisdiction ceded to United States. Accommodations for 15 officers and 3 batteries of artillery. Water supply from Crystal Water Company. Sewer system.

Walla Walla, Fort, Wash.—Latitude, $46^{\circ} 6'$; longitude, $118^{\circ} 24'$; 245 miles from Vancouver barracks and 1 mile from Walla Walla, on Northern Pacific Railroad. Post-office, telegraph and railroad station, Walla Walla, Wash. Reservation, about 613 acres. Jurisdiction ceded to United States. Accommodations for 16 officers, 2 troops cavalry, and 4 companies infantry. Water from springs on leased ground

1½ miles from post, conducted to a reservoir of 7,000 gallons capacity, thence distributed by gravity, there being another reservoir at the post of 85,000 gallons capacity for fire protection. Sewer system.

Warren, Fort, Mass.—Latitude, $42^{\circ} 19'$; longitude, $70^{\circ} 59'$. On Georges Island, in Boston Harbor, 7 miles from Boston. Post-office and telegraph station, Boston. Daily steamer. Reservation, the whole island, about 18 acres. Jurisdiction ceded to United States. Accommodations for 3 officers in cottages, 8 officers in casemates, and 2 batteries artillery. Water supply from 10 cisterns and 4 wells, also by connection with Boston mains. Sewer system.

Washakie, Fort, Wyo.—Latitude, $42^{\circ} 59'$; longitude, $108^{\circ} 54'$. On Little Wind River, 172 miles from Casper and 147 miles from Rawlins, on Union Pacific Railroad. Post-office and telegraph station at the post. Daily stage from Rawlins. Buckboard wagon twice a week from Casper. Reservation, 1,405 acres, on Indian lands. Jurisdiction ceded to United States. Accommodations for 9 officers, 1 troop cavalry, 2 companies infantry. Water pumped to tank of 10,000 gallons capacity by steam power from south fork of Little Wind River, and distributed by iron pipes. No sewer system.

Washington barracks, D. C.—Latitude, $38^{\circ} 53'$; longitude, $77^{\circ} 3'$. On Greenleaf Point, Potomac River, District of Columbia. Post-office, telegraph, and railroad station, Washington, D. C. Reservation, about 69 acres. Jurisdiction ceded to United States. Accommodations for 24 officers, 1 light battery, 4 batteries artillery, and band. Water from Washington city waterworks, owned by the United States. Sewer system.

Washington, Fort, Md.—Latitude, $38^{\circ} 43'$; longitude, $77^{\circ} 6'$. On Potomac River, 13 miles from Washington, D. C. Post-office at post. Telegraph and railroad station, Alexandria, Va. Steamboat from Washington. Reservation, about 50 acres. Jurisdiction ceded to United States. Not garrisoned. In charge of an ordnance sergeant.

Wayne, Fort, Mich.—Latitude, $42^{\circ} 23'$; longitude, $82^{\circ} 58'$. On Detroit River, 4 miles from city hall in Detroit, which is the post-office and telegraph station. City railway to post. Reservation, about 63 acres. Jurisdiction ceded to United States. Accommodations for 15 officers, 4 companies infantry, and band. Water from Detroit city waterworks. Sewer system.

West Point, N. Y.—Latitude, $41^{\circ} 23'$; longitude, $74^{\circ} 41'$. On west bank of the Hudson River, 51 miles above New York City. Post-office, telegraph, and railroad station west shore at the post. Reservation, 2,330 acres. Jurisdiction ceded to United States. United States Military Academy. Accommodations for 50 officers; 5 barracks. Water piped from springs by gravity and distributed from reservoir through iron pipes. Sewer system.

Whipple barracks, Ariz.—Latitude, $34^{\circ} 33'$; longitude, $112^{\circ} 27'$. On S. F., P. and P. R. R. One mile from Prescott, Ariz. Post-office and railroad station at post. Telegraph station, Prescott. Reservation, about 1,730 acres. Accommodations for 20 officers, 1 troop cavalry, and 4 companies infantry. Water pumped from a well on Granite Creek to a reservoir of 80,000 gallons capacity; thence distributed by iron pipes. Sewer system.

Willels Point, N. Y.—Latitude, $40^{\circ} 47'$; longitude, $73^{\circ} 47'$. On East River, 2½ miles from Whitestone, Queens County, 17 miles from New York City. Post-office and telegraph station at post. Railroad station, Whitestone, N. Y. Reservation, about 136.35 acres. Jurisdiction ceded to United States. Engineer station. Accommodations: 11 sets officers' quarters, 12 bachelors, 3 companies. Water from Flushing village waterworks. Sewer system.

Winfield Scott, Fort, Cal.—Latitude, $37^{\circ} 49'$; longitude, $122^{\circ} 48'$. Golden Gate, San Francisco, Cal. Post-office and telegraph station, the Presidio of San Francisco. Railroad station, San Francisco. On the Presidio reservation. Not garrisoned.

Wingate, Fort, N. Mex.—Latitude, $35^{\circ} 29'$; longitude, $108^{\circ} 32'$. Situated at Bear Spring, 3 miles from Wingate, on the Atlantic and Pacific Railroad, which is the railroad station. Post-office and telegraph station at the post. Reservation, 130 square miles. Accommodations for 22 officers and 8 troops cavalry. Water pumped from a spring into 2 reservoirs of 223,000 gallons total capacity; distributed. Sewer system.

Winthrop, Fort, Mass.—Latitude, $42^{\circ} 21'$; longitude, $70^{\circ} 1'$. On Governors Island, Boston Harbor, 2 miles from Boston, which is the post-office, telegraph, and railroad station. Steamboat to post. Reservation, about 60 acres. Jurisdiction ceded to United States. Not garrisoned. In charge of ordnance sergeant.

Wood, Fort, N. Y.—Latitude, $40^{\circ} 41'$; longitude, $74^{\circ} 11'$. On Bedloe Island, in New York Harbor, 3 miles from New York City, which is the post-office, railroad, and telegraph station. Reservation, about 12 acres. Jurisdiction ceded to United States. Accommodations for 4 officers and 1 company of infantry. Water supply, cisterns. Sewer system.

Yates, Fort, N. Dak.—Latitude, $46^{\circ} 11'$; longitude, $100^{\circ} 34'$; 60 miles from Bismarck (which is on the Northern Pacific Railroad) and 445 miles from St. Paul. Post-office

and telegraph station at post. Daily stage, except Sunday, from Bismarck; river crossed by ferry. Reservation, 1 square mile, on Indian lands. Jurisdiction ceded to United States. Accommodations for 19 officers, 2 troops cavalry, 4 companies infantry, and 3 Indian companies. Water pumped by steam power from 6 driven wells to tank of 30,000 gallons capacity, thence distributed. Surface drainage.

Yellowstone, Fort, Wyo.—Latitude, $44^{\circ} 58'$; longitude, $102^{\circ} 39'$. On Beaver Creek, 8 miles from Cinnabar, on Yellowstone Park line of Northern Pacific Railroad, 1,058 miles from St. Paul. During winter, trains run on this branch line Saturdays only. Post-office and telegraph station, Mammoth Hot Springs, Wyo. Old reservation, 25 square miles; new, 22.5 acres set aside by the Secretary of the Interior for use of military authorities. Additional tract of about 5.5 acres set aside for hospital site by Secretary of Interior May 11, 1893. Exclusive jurisdiction in United States reserved by Congress. Accommodations for 4 officers and 1 troop cavalry at new post; 2 officers and 1 troop cavalry at old post. Water supply from Clematis Springs, dammed up to supply post through water-supply system. Partial sewer system.

Yerba Buena Island, Cal.—Latitude, $37^{\circ} 49'$; longitude, $122^{\circ} 27'$. Two and one-half miles northeast of San Francisco, Cal. Reservation, the whole island, about 120 acres. Jurisdiction ceded to United States. General Order 59, of 1892, transferred reservation to the Engineer Department, for use and occupation as a torpedo station for the Pacific coast.

Yosemite National Park, Camp in, Cal.—Post-office and telegraph station, Wawona, Cal.; railroad station, Raymond, via Barends station, on Southern Pacific Railroad, distance 40 miles; triweekly stage to camp. Present garrison, 1 troop of cavalry (in camp).

List of papers accompanying the annual report of the Quartermaster-General for the fiscal year ending June 30, 1894.

1. Report of Lieut. Col. M. I. Ludington, Deputy Quartermaster-General, U. S. Army, of the operations of the finance, inspection, money and property accounts, clothing returns and clothing supply, branches, Quartermaster-General's Office, for the fiscal year ending June 30, 1894.

A.—Statement showing articles of clothing and equipage and material on hand at the issuing depots of the Quartermaster's Department, June 30, 1893, the quantities purchased, manufactured, received from posts and depots, taken up, sold, transferred to general depots, expended, issued to the Army and the militia, and the quantities remaining in depots June 30, 1894.

2. Report of Maj. D. D. Wheeler, quartermaster, U. S. Army, of the operations of the transportation and regular supplies branches, Quartermaster-General's Office, for the fiscal year ending June 30, 1894.

3. Report of Capt. W. S. Patten, assistant quartermaster, U. S. Army, of the operations of the miscellaneous claims, cemeterial, and mail and records branches, Quartermaster-General's Office, for the fiscal year ending June 30, 1894.

A.—Statement of disbursement of appropriation "National cemeteries" during the fiscal year ending June 30, 1894.

4. Report of Capt. C. P. Miller, assistant quartermaster, U. S. Army, of the operations of the barracks and quarters branch, Quartermaster-General's Office, for the fiscal year ending June 30, 1894.

A.—Statement showing property rented by the Quartermaster's Department during the fiscal year ending June 30, 1894.

5. Report of Capt. O. F. Long, assistant quartermaster, U. S. Army, of the operations of the reservation branch, Quartermaster-General's Office, for the fiscal year ending June 30, 1894.

A.—Statement of expenditures authorized for water, sewerage, and plumbing, chargeable to appropriation "Army transportation," for the fiscal year ending June 30, 1894.

B.—Statement of expenditures authorized for lighting, heating, etc., chargeable to appropriation "Regular supplies," for the fiscal year ending June 30, 1894.

C.—Statement showing military reservations turned over to the Interior Department or otherwise disposed of from 1858 to June 30, 1894.

D.—Statement giving alphabetical list of military reservations, showing location, size, how occupied, accommodations for officers and men, etc., on June 30, 1894.

**REPORT OF THE COMMISSARY-GENERAL
OF SUBSISTENCE.**

REPORT

OF THE

COMMISSARY-GENERAL OF SUBSISTENCE.

WAR DEPARTMENT,
OFFICE COMMISSARY-GENERAL OF SUBSISTENCE,
Washington, D. C., September 25, 1894.

SIR: I have the honor to submit the following report of the operations of the Subsistence Department for the fiscal year ending June 30, 1894:

RESOURCES AND EXPENDITURES.

The following statement exhibits the aggregate fiscal resources and expenditures of the department for the year mentioned, and the balances at the close of the fiscal year:

RESOURCES.

Amounts in the Treasury to the credit of appropriations of the Subsistence Department on June 30, 1893, as follows:

Subsistence of the Army, 1892.....	\$140,056.30	
Subsistence of the Army, 1893.....	18.29	
Commutation of rations to prisoners of war in rebel States and soldiers on furlough:		
Certified claims, acts March 2, 1889, and April 4, 1890	2,046.08	
Certified claims, 1893, act August 5, 1892.....	16,479.75	
	\$158,600.42	

Amounts to credit of officers of the Subsistence Department and of officers doing duty in the Subsistence Department with the Treasurer, assistant treasurers, and designated depositaries, and in their personal possession on June 30, 1893, as follows:

Subsistence of the Army, 1893.....	90,987.83	
Commutation of rations to prisoners of war in rebel States and soldiers on furlough:		
Certified claims, 1893, act August 5, 1892.....	670.62	
	91,658.45	

Amounts refunded to the Treasury near close of fiscal year 1893, since carried to the credit of the appropriations, as follows:

Subsistence of the Army, 1893.....	3,517.20
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Amounts appropriated for the Subsistence Department for the fiscal year ending June 30, 1894, as follows:

Subsistence of the Army, 1894, act of February 27, 1893	\$1,700,000.00	
Commutation of rations to prisoners of war in rebel States and soldiers on furlough:		
Certified claims, 1894, act of March 3, 1893	30,000.00	
		<hr/> \$1,730,000.00

Amounts collected from various sources and refunded to the appropriations of the Subsistence Department on the books of the Treasury during the fiscal year 1894, as follows:

Subsistence of the Army, 1891, and prior years.....	122.76	
Subsistence of the Army, 1891, and prior years, transfer account	1,246.61	
Subsistence of the Army, 1892	3,016.63	
Subsistence of the Army, 1892, transfer account....	34.71	
Subsistence of the Army, 1893	11,173.52	
Subsistence of the Army, 1893, transfer account....	9.32	
Subsistence of the Army, 1894	4,641.40	
Amount placed on books of Treasury, by war indefinite appropriation warrant—commutation of rations to prisoners of war in rebel States and soldiers on furlough:		
Certified claims, act of August 30, 1890	20.25	
Certified claims, act of March 3, 1891	29.00	
		<hr/> 20,294.20

Amounts received by officers of the Subsistence Department, and by officers doing duty in the Subsistence Department, from sales of subsistence stores to the following purchasers during the fiscal year 1894, and taken up for immediate disbursement under the following appropriations:

Subsistence of the Army, 1893: Sales to enlisted men.	2,750.58	
Subsistence of the Army, 1894: Sales to officers, \$290,906.35; to enlisted men, companies, detachments, and hospitals, \$425,867.01; to post exchanges, \$36,890.25; to civilian employes, \$12,713.92; to Leavenworth Military Prison, \$3,732.53; to Quartermaster's Department, \$1,649.89; to Indian agents and employes, \$1,729.37; to naval officers, \$439.90; of surplus and condemned stores and property, at auction, \$2,096.49; to Princeton College, \$20.47; of boxes, barrels, etc., \$95.91; of garden seeds, \$223.32; total	776,365.41	
		<hr/> 779,115.99

Amounts taken up by officers doing duty in the Subsistence Department on account of reclamations for stores lost, damaged, etc., and in correction of errors in their accounts, etc., during the fiscal year 1894:

Subsistence of the Army, 1893.....	126.01	
Subsistence of the Army, 1894.....	780.21	
		<hr/> 906.22

Amounts charged against officers still in service on account of funds and stores alleged to have been lost by theft, etc., for which relief can only be obtained in the Court of Claims under sections 1059 and 1062, Revised Statutes, or from Congress, as follows:

Subsistence of the Army, 1880.....	75.92	
Subsistence of the Army, 1886.....	2,455.82	
Subsistence of the Army, 1889.....	82.37	
Subsistence of the Army, 1891.....	41.16	
		<hr/> 2,655.27

Total resources.....	2,786,747.75
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EXPENDITURES.

Amounts expended on the books of the Treasury from the appropriations of the Subsistence Department during the fiscal year 1894, as follows:

Subsistence of the Army, 1891 and prior years, transfer account.....	\$78. 99	
Subsistence of the Army, 1892.....	555. 75	
Subsistence of the Army, 1893.....	3, 307. 70	
Subsistence of the Army, 1894.....	95. 70	
Commutation of rations to prisoners of war in rebel States and soldiers on furlough:		
Certified claims, 1891, act August 30, 1890.....	20. 25	
Certified claims, 1892, act March 3, 1891.....	29. 00	
Certified claims, 1893, act August 5, 1892.....	36. 50	
Certified claims, 1894, act March 3, 1893.....	103. 75	
		\$4, 227. 64

Amount disbursed by officers of the Subsistence Department and officers doing duty in the Subsistence Department during the fiscal year 1894, as follows:

Subsistence of the Army, 1893.....	70, 128. 08	
Subsistence of the Army, 1894.....	2, 399, 502. 58	
Commutation of rations to prisoners of war in rebel States and soldiers on furlough:		
Certified claims, 1893, act August 5, 1892	668. 00	
Certified claims, 1894, act March 3, 1893.....	8, 555. 26	
		2, 478, 853. 92

Amounts dropped by officers doing duty in the Subsistence Department in correction of errors in their accounts during the fiscal year 1894:

Subsistence of the Army, 1893.....	58. 64	
Subsistence of the Army, 1894.....	79. 54	
		138. 18

Amounts transferred on books of Treasury, act March 3, 1875 (18 Stat. L., 418):

Subsistence of the Army, 1891 and prior years, transfer account	1, 167. 62	
Subsistence of the Army, 1892, transfer account....	34. 71	
Subsistence of the Army, 1893, transfer account....	9. 32	
		1, 211. 65

Amounts carried to the surplus fund on June 30, 1894:

Subsistence of the Army, 1891 and prior years.....	122. 76	
Subsistence of the Army, 1892.....	142, 517. 18	
		142, 639. 94

Amount of charges against officers removed by Second Auditor's settlements, viz:

Subsistence of the Army, 1889, settlement of March 19, 1894	58. 33	
Subsistence of the Army, 1891, settlement of June 11, 1894	41. 16	
		99. 49

Total expenditures..... 2, 627, 170. 82

BALANCES.

Amounts in the Treasury to the credit of appropriations of the Subsistence Department on June 30, 1894, as follows:

Subsistence of the Army, 1893.....	31, 273. 01	
Subsistence of the Army, 1894.....	995. 03	
Commutation of rations to prisoners of war in rebel States and soldiers on furlough:		
Certified claims, acts March 2, 1889, and April 4, 1890.....	2, 046. 08	
Certified claims, 1893, act August 5, 1892.....	16, 445. 87	
Certified claims, 1894, act March 3, 1893.....	20, 396. 25	
		71, 156. 24

Amounts to credit of officers of the Subsistence Department and of officers doing duty in the Subsistence Department, with the Treasurer, assistant treasurer, and designated depositaries, and in their personal possession, on June 30, 1894, as follows:

Subsistence of the Army, 1894.....	\$76, 896. 77	
Commutation of rations to prisoners of war in rebel States and soldiers on furlough:		
Certified claims, 1894, act March 3, 1893.....	944. 74	
		<hr/> \$77, 841. 51

Amounts refunded to the Treasury near close of fiscal year 1894, but not carried to the credit of the appropriations by June 30, 1894, as follows:

Subsistence of the Army, 1893	3, 806. 00	
Subsistence of the Army, 1894	4, 217. 40	
		<hr/> 8, 023. 40

Amounts charged against officers still in service on account of funds and stores alleged to have been lost by theft, etc., and for which relief can only be obtained in the Court of Claims under sections 1059 and 1062, Revised Statutes, or from Congress, as follows:

Subsistence of the Army, 1880	75. 92	
Subsistence of the Army, 1886	2, 455. 82	
Subsistence of the Army, 1889	24. 04	
		<hr/> 2, 555. 78

Total balances.....		<hr/> 159, 576. 93
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SUPPLIES.

The Subsistence Department is charged with the duty of purchasing and issuing to the Army such supplies as enter into the composition of the ration, and of procuring and keeping for sale to officers and enlisted men such articles as may from time to time be designated by the inspectors-general of the Army. These supplies are purchased as near the points of consumption as practicable, regard being had to their quality and prices as compared with those of stores at more remote points and to the cost of transportation from place of purchase to place of issue or sale. The greater portions of the supplies have during the past year been procured as usual in the large markets of the country, such as New York, Chicago, San Francisco, St. Paul, Omaha, St. Louis, Kansas City, New Orleans, etc., but fresh meat, and, to a great extent, flour and fresh vegetables, have been obtained from dealers and producers at or near the points of issue.

ADVERTISEMENTS AND CONTRACTS.

During the fiscal year ending June 30, 1894, 150 newspaper advertisements and 622 circulars and posters inviting proposals for subsistence supplies were reported to this office. There were also reported 617 contracts of various kinds for fresh meats, fresh vegetables, complete rations, and other supplies required for the Army.

ISSUES TO INDIANS.

The following statement shows the value of subsistence stores issued to Indians during the year chargeable to the Indian Bureau of the Interior Department, the amounts reimbursed by that Bureau, and the amounts still due, viz:

To whom issues made.	Value of issues.	Reimbursement by Indian Bureau.	Balance due from Indian Bureau.
Enlisted Indians and their families:			
Troop L, Third Cavalry.....	\$890. 14	\$890. 14	.....
Troop L, Eighth Cavalry.....	3,868. 29	3,847. 97	\$20. 32
Families of enlisted Indians:			
Company I, Second Infantry.....	244. 93	237. 08	7. 85
Company I, Sixteenth Infantry.....	103. 95	103. 95	.....
Company I, Twenty-first Infantry.....	49. 38	49. 38	.....
Destitute Gros Ventres Indians.....	141. 83	141. 83	.....

The items of \$186.67 and \$1,105.45, for like issues in previous fiscal year, which were disallowed by the accounting officers of the Treasury as not a proper charge against the Indian Bureau, have since been allowed and the amounts transferred to the credit of the appropriation subsistence of the Army, 1893.

The following issues were made to Indians for which no charge was made against the Indian Bureau, viz:

To whom issues were made.	Value of issues.
Chiricahua Indian prisoners at Mount Vernon barracks, Ala.....	\$14,055. 37
Indian prisoners at various posts.....	12. 73
Indians visiting military posts under Army Regulations 1395 and 1396.....	1,062. 94
Destitute Indians.....	19. 33
Total.....	15,150. 37

MISCELLANEOUS ISSUES AND EXPENDITURES.

Issues to the value of \$93.83 were made to teachers of Indians at Mount Vernon barracks, Ala. These issues have been paid for from the appropriation contingencies of the Army.

Destitute citizens were supplied with subsistence at several posts during the year, upon orders of the commanding officers. These issues amounted to 829 incomplete rations.

For liquid coffee there was expended \$3,881.70, being a decrease of \$2,492.84 from the expenditure of previous year for same purpose; for extra-duty service, \$22,169.90, an increase of \$88.85; for advertising, \$6,753.89, a decrease of \$3,121.65; for cooked rations, \$82,413.19, a decrease of \$11,688.53; for the construction of new and repair of old ovens, \$7,399.49, an increase of \$762.20.

LOSSES OF STORES AND PROPERTY.

The value of the stores lost by accident, by wastage in transportation, while in store, etc., during the year, for which no one was held accountable, was \$7,938.58, of which \$2,669.39 was due to the fire at Jefferson barracks, Mo., April 25, 1894. The subsistence property destroyed at same fire was valued at \$86.57.

Supplies lost in transportation during the year, for which responsibility was fixed, amounted to \$1,178.83, of which \$379.08 has been collected.

SALE OF CONDEMNED AND SURPLUS STORES.

	Subsistence stores.		
	Condemned.	Surplus.	Total.
Original cost	\$7, 434. 15	\$1, 621. 01	\$9, 055. 16
Amounts realized from sales	426. 50	1, 398. 80	1, 825. 30
Loss	7, 007. 65	222. 21	7, 229. 86

a decrease from previous year in the value of stores condemned of \$2,695.28.

Of subsistence property, the amount realized from such as was condemned was \$195.59, and from such as was surplus \$75.60.

COMMISSARY SERGEANTS.

The number of commissary sergeants in service at the commencement of the fiscal year was 106. During the year 3 new appointments were made, 1 died, and 4 were retired. The number in service at the close of the year was 104.

SALES ON CREDIT TO ENLISTED MEN.

In a letter from this office to the Adjutant-General of the Army, dated September 5, 1894, relative to the losses occurring to the appropriations of the Subsistence Department on account of credit sales of subsistence stores, it was said:

Sales on credit to enlisted men, within the limits of the unencumbered pay due them respectively, were made obligatory on the Subsistence Department in July, 1890, by General Order, No. 73, of that year. The following table exhibits the aggregate amounts of sales made to enlisted men, companies, detachments, and hospitals* during a period of four years previous to the issuance of General Order, No. 73, of 1890, when all sales were made for cash only, and also the aggregate amount of sales similarly made for four years after the promulgation of that order, when sales were made on credit as well as for cash.

Sales to enlisted men, companies, detachments, and hospitals.

For cash only.		For cash and on credit.	
Fiscal year 1887.....	\$421, 216. 84	Fiscal year 1891.....	\$453, 361. 24
Fiscal year 1888.....	430, 540. 26	Fiscal year 1892.....	454, 421. 79
Fiscal year 1889.....	436, 898. 61	Fiscal year 1893.....	437, 747. 98
Fiscal year 1890.....	438, 721. 82	Fiscal year 1894.....	425, 867. 01
Total	1, 727, 377. 53	Total	1, 771, 398. 02

This table shows that during the years 1891 and 1892, when the new system of credit sales was popular, large sales were made by the Subsistence Department, but that in 1893 and 1894 the novelty had worn off and the sales had materially decreased.

* It should be stated that, in reporting sales, those to hospitals were, as a matter of convenience, included in those made to enlisted men, companies, and detachments. The amounts were small, however, and would not materially affect the result.

The following is a statement of the amounts of credit sales made to enlisted men in the fiscal years 1891, 1892, 1893, and 1894, with the amounts which have been collected on account of such sales under Army Regulation 1414 of the present Regulations, viz:

Fiscal year.	Amount of credit sales.	Amount collected.	Amount uncollected.
1891	\$13,207.14	\$13,056.78	\$150.36
1892	21,426.59	21,254.54	172.05
1893	26,617.88	24,828.05	1,789.83
1894	33,890.60	29,727.57	4,163.03
Total	95,142.21	88,866.94	6,275.27

This table shows that the losses to the appropriations of the Subsistence Department during the first two years were comparatively small; but that in 1893 and 1894 they assumed greater proportions. Although the loss in 1894, as shown, was very great, the amount reported, it is expected, will be reduced by collections to be made at the July and August payments of the troops, but not to an extent to diminish the losses of the year below those of the previous year. These losses are thus shown to be increasing from year to year. They arise from desertion of enlisted men, and from lack of final settlement in the Auditor's office of pay accounts of deceased soldiers, and from other causes unknown to this office, it having no means of determining whether charges for sale of subsistence stores on credit are duly entered and carried forward on muster and pay rolls, as required by Army Regulation 1414, or not. The system prescribed by Revised Statutes 1144 and 1300, and by Army Regulations 1414, involves accountability in both the Subsistence and Pay departments, and necessitates the making out and handling of many papers in parting with the stores to the enlisted men, in accounting for the stores so parted with, in charging them against the men on the muster and pay rolls, in making the collections by paymasters, in transferring such collections to subsistence officers, or the transferring of such sums, on the settlement of the paymaster's accounts, from the appropriations of the Pay Department to those of the Subsistence Department. The system, it will be seen, is not only cumbersome, but the clerical labor involved in the two departments concerned renders the system of furnishing subsistence stores to enlisted men on credit an exceedingly expensive one, independent of the losses by bad debts hereinabove explained. Collections made after the close of a fiscal year (for sales made, for instance, in June and July of the expired year) are always lost to the Subsistence Department, as upon settlement they are carried to the appropriation of the expired year.

There is also a question of the moral effect upon the enlisted men in being permitted to spend their pay in a way not to feel the loss of it until pay day has arrived. But, looking to the interests of the United States only, it would seem that the Government is paying too much for the facilities which are being afforded to the enlisted men for parting with their pay. At all events, as payments are now made to troops with regularity, it would seem to be no hardship to require enlisted men to pay cash for their purchases, the same as they were required to do previous to July, 1890.

In concurring in the recommendations of this office upon the foregoing subject, the acting Paymaster-General said:

The sale of subsistence stores on credit to enlisted men at military posts is productive of much paper work in both Pay and Subsistence departments, and results in loss of several thousand dollars to the Government every year. There is no necessity for these credit sales. The ration issued to the troops is ample and of the best quality. The post exchange provides any articles of food at cost price, and the proximity of most military posts to towns and villages, where luxuries can be obtained, if desired, renders it entirely unnecessary that public supplies should be sold on credit. The cost of such supplies is charged on the muster rolls against the soldier, and by reason of desertion and other causes, in many cases is never collected. When troops are in the field, away from their regular base of supply, there could be no objection to purchase from the Subsistence Department of such stores as might be necessary; but there is no such contingency at present existing, and none will probably soon exist.

When the soldier can go in debt to the post exchange for a certain amount, purchase subsistence stores on credit, and owe his company tailor and laundress, he has nothing left of his pay at the end of the month.

To be allowed to purchase subsistence stores on credit is to encourage continual indebtedness, loss of money to the Government, and loss of self-respect to the soldier.

If he wishes to purchase supplies from the Government let him pay for them at the time of purchase. In other words, put him on the same footing as officers in this respect.

It has been supposed that section 1144, Revised Statutes, supplemented by section 1300, confers a right upon enlisted men to make all their purchases on credit, if they so elect. The experience of the past few years shows that this construction is a mischievous one, whatever views may be held as to the efficacy of the statute for conferring the right. Also section 1144 referred to seems to give to each inspector-general of the Army authority to "designate" articles to be kept for sale, whereas, in point of practice, the recommendations of these several inspectors-general are submitted to the Secretary of War, and the latter decides as to what shall be so kept.

With the view of settling all questions as to the scope of the law, (and incidentally of reducing the expenses of selling subsistence stores on credit, by simplifying the paper accountability in the Subsistence and Pay departments), it is recommended that sections 1299 and 1300 of the Revised Statutes be repealed, and that section 1144 be amended to read as follows:

SEC. 1144. The officers of the Subsistence Department shall procure and keep for sale to officers and enlisted men, at cost price, for cash, such articles of subsistence stores as may, from time to time, be designated by the Secretary of War: *Provided*, That sales of such stores on credit may be made to officers and enlisted men who have not been regularly paid, or who are in the field where it is impracticable to procure funds, the amounts due therefor to be charged on the pay accounts of officers and on the muster and pay rolls of enlisted men next after the date of purchase, and deducted from the payments made upon such pay accounts or muster and pay rolls by the Pay Department.

CORRESPONDENCE AND EXAMINING DIVISION.

(Formerly accounts and returns division.)

	Accounts current.	Returns of subsist- ence stores.	Returns of subsist- ence prop- erty.	Total.
On hand June 30, 1893.....	367	271	38	676
Received during the fiscal year 1894.....	2, 086	1, 562	615	4, 263
Total	2, 453	1, 833	653	4, 939
Examined during the year.....	2, 316	1, 746	650	4, 712
On hand June 30, 1894.....	137	87	3	227

The examination of the accounts current involved the verification of 40,978 vouchers; the returns of subsistence stores, 30,845 vouchers, and the returns of subsistence property, 1,383 vouchers.

There were 4,517 letters and 1,892 indorsements written, and 52 papers copied in connection with the examinations. The accounts and returns were rendered by 377 officers.

CLAIMS DIVISION.

	Claims for commutation of rations while held as prisoner of war.	Claims for commutation of rations while on fur- longh; and miscellane- ous claims.	Total.
On hand June 30, 1893	38	49	87
Received during the fiscal year	210	626	836
Total	248	675	923
Disposed of during the year	240	653	893
On hand June 30, 1894	8	22	30

In addition to the foregoing, 14 old disallowed claims of the above character were reopened and disposed of.

The number of communications sent out during the year was 3,905.

DUTIES AND STATIONS OF OFFICERS OF THE SUBSISTENCE DEPARTMENT.

A roster of the officers of the Subsistence Department on June 30, 1894, showing their stations and duties on that date, is hereto appended.

Very respectfully,

JOHN P. HAWKINS,
Commissary-General of Subsistence.

The SECRETARY OF WAR.

Roster of the Subsistence Department, U. S. Army, June 30, 1894.

Name, rank, and brevet rank.	Duty and station.	Assigned to present station.
COMMISSARY-GENERAL OF SUBSISTENCE. <i>Brigadier-general.</i>		
John P. Hawkins (brevet major-general, Mar. 13, 1865).	Commissary-General of Subsistence, Washington, D. C. On leave.	Dec. 29, 1892
ASSISTANT COMMISSARIES-GENERAL OF SUBSISTENCE.		
<i>Colonels.</i>		
Michael R. Morgan (brevet brigadier-general, April 9, 1865).	Assistant to the Commissary-General of Subsistence, Washington, D. C. In charge of office.	Sept. 6, 1892
Thomas C. Sullivan	Purchasing C. S. at Chicago, Ill	Feb. 16, 1892
<i>Lieutenant-colonels.</i>		
John W. Barriger (brevet brigadier-general, Mar. 13, 1865).	Chief C. S., Department of the East, New York, N. Y.	Jan. 26, 1893
Thomas Wilson, (brevet brigadier-general, Mar. 13, 1865).	Purchasing C. S. at New York City, N. Y.	Feb. 29, 1892
William H. Bell	Chief C. S., Department of California, San Francisco, Cal.	Mar. 26, 1894
COMMISSARIES OF SUBSISTENCE.		
<i>Majors.</i>		
Jeremiah H. Gilman, (brevet lieutenant-colonel Dec. 31, 1862).	Chief C. S., Department of the Missouri, Chicago, Ill. ...	Aug. 29, 1892

Roster of the Subsistence Department, U. S. Army, June 30, 1894—Continued.

Name, rank, and brevet rank.	Duty and station.	Assigned to present station.
COMMISSARIES OF SUBSISTENCE—continued.		
<i>Majors—Continued.</i>		
Samuel T. Cushing	Assistant to the Commissary-General of Subsistence, Washington, D. C.	May 3, 1894
William A. Elderkin	Purchasing C. S. at Los Angeles, Cal	Oct. 11, 1893
Charles B. Penrose, (brevet lieutenant-colonel, Nov. 11, 1867).	Purchasing C. S. at Baltimore, Md	Aug. 31, 1890
William H. Nash	Chief C. S., Department of the Columbia, and purchasing C. S., Vancouver Barracks, State of Washington.	Jan. 1, 1890
Charles P. Eagan	Purchasing C. S. at San Francisco, Cal	Apr. 1, 1894
John F. Weston	Chief C. S., Department of Texas, and purchasing C. S. at San Antonio, Texas.	July 5, 1893
Charles A. Woodruff	Assistant to the Commissary-General of Subsistence, Washington, D. C.	Apr. 10, 1894
<i>Captains.</i>		
John J. Clague	Chief C. S., Department of Dakota, and purchasing C. S. at St. Paul, Minn.	Feb. 8, 1892
Wells Willard	Post C. S., Fort Monroe, Va	July 17, 1893
Henry G. Sharpe	Purchasing C. S. at St. Louis, Mo	Jan. 21, 1893
Frank E. Nye	Chief C. S., Department of the Platte, and purchasing C. S. at Omaha, Nebr.	Apr. 25, 1894
Douglas M. Scott	Purchasing C. S. at Washington, D. C	July 21, 1893
William L. Alexander	Purchasing C. S. at Denver, Colo	Mar. 26, 1894
Henry B. Osgood	Purchasing C. S. at Boston, Mass	July 20, 1893
Oskaloosa M. Smith	Purchasing C. S. at New Orleans, La	May 31, 1892
Edward E. Dravo	Chief C. S., Department of the Colorado, Denver, Colo..	Aug. 13, 1893
Abiel L. Smith	Purchasing C. S. at Kansas City, Mo	June 30, 1893
Tasker H. Bliss	On detached duty as aid-de-camp to the Major-General Commanding the Army, Washington, D. C.	Dec. 23, 1892
James M. Allison	Purchasing C. S. at Cincinnati, Ohio	Sept. 19, 1893

REPORT OF THE SURGEON-GENERAL OF THE ARMY.

REPORT

OF

THE SURGEON-GENERAL.

WAR DEPARTMENT, SURGEON-GENERAL'S OFFICE,
Washington, D. C., September 20, 1894.

SIR: I have the honor to submit herewith a statement of disbursements made during the fiscal year ended June 30, 1894, from the appropriation made by act of Congress approved February 27, 1893, for the support of the Medical Department of the Army and the balance on hand at the close of said fiscal year, viz:

Medical and Hospital Department, 1894:		
Appropriated by act approved February 27, 1893.....		\$185,500.00
Refunded during the year.....		52.26
		185,552.26
Total to be accounted for		
Disbursed during the year:		
For medical and hospital supplies	\$46,670.44	
For pay of employes	33,877.39	
For expenses of supply depots.....	163.47	
For medical attendance and medicines.....	14,019.91	
For washing at post hospitals	2,186.17	
For advertising	32.40	
For miscellaneous expenses	101.85	
For material for experimental cooking.....	448.10	
	97,499.73	
		88,052.53
Balance to be accounted for July 1, 1894.....		
Balance in U. S. Treasury.....	49,357.97	
In hands of disbursing officers:		
New York.....	20,847.87	
St. Louis	12,852.33	
San Francisco.....	3,632.18	
Washington	1,349.39	
Army and Navy General Hospital.....	12.79	
	88,052.53	

Of the balance remaining on hand July 1 a considerable portion has already been or will be expended in payment for supplies contracted for and for other obligations incurred prior to July 1, 1894. But after paying these obligations a balance of about \$5,000 will remain, which will revert to the Treasury. I trust that this saving from the appropriation made by Congress will be taken as evidence of economical administration, and of my desire to keep the expenditures for the Medical Department of the Army within as reasonable limits as practicable without impairing the efficiency of the services rendered by it.

The approximate value of the medical and hospital supplies actually issued during the fiscal year ended June 30, 1894, was \$120,000.

I also respectfully submit a statement showing the expenditures during the last fiscal year from the appropriations for the Medical Department for prior fiscal years, and the balances on hand June 30, 1894:

Medical and Hospital Department, 1893:

Balance on hand July 1, 1893.....	\$65,680.37
Refunded during the year	389.04

Total to be accounted for.....	66,069.41
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Disbursed during the year:

For medical and hospital supplies.....	\$62,332.55
For pay of employes.....	100.00
For expenses of supply depots.....	2.02
For medical attendance and medicines.....	997.55
For washing for post hospitals.....	223.82
For miscellaneous expenses.....	3.00
	<u>63,658.94</u>

Balance on hand June 30, 1894.....	2,410.47
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In addition to the sum of \$997.55 expended for medical attendance and medicines, there were also approved at this office and forwarded to the Paymaster-General of the Army vouchers for such services amounting to \$1,929.44 for payment from the appropriation made by act approved July 16, 1892, viz: "For pay for medical services at posts where there are no medical officers." The amount disbursed for medical services rendered by civilian physicians during the fiscal year 1893, reported in my last annual report, was \$16,537.40. Adding to this amount the two sums above reported as expended for medical attendance during the fiscal year 1893, viz, \$997.55 and \$1,929.44, it will be seen that the grand total paid so far for medical attendance rendered by civilian physicians during the said fiscal year 1893 amounts to \$19,464.39; and it is estimated that accounts for such services amounting to \$250 will still be presented for payment.

Medical and Hospital Department, 1892:

Balance on hand July 1, 1893	\$6,683.55
Disbursed during the year.....	\$6,586.06
Carried to the surplus fund	97.49
	<u>6,683.55</u>

Contingencies, headquarters military departments, 1894:

Appropriated by act approved February 27, 1893—	
Allotment for the Medical Department.....	400.00
Disbursed during the year	273.59

Balance on hand June 30, 1894.....	126.41
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Library of the Surgeon-General's Office, 1893:

Balance on hand July 1, 1893	13.21
Disbursed during the year.....	13.21

Library of the Surgeon-General's Office, 1894:

Appropriated by act approved February 27, 1893.....	7,000.00
Disbursed during the year.....	6,868.77

Balance on hand June 30, 1894	131.23
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Army Medical Museum, 1893:

Balance on hand July 1, 1893	1,399.03
Disbursed during the year.....	1,371.80

Balance on hand June 30, 1894	27.23
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SURGEON-GENERAL.

357

Army Medical Museum, 1894:

Appropriated by act of Congress approved February 27, 1893.....	\$5,000.00
Disbursed during the year.....	4,194.30

Balance on hand June 30, 1894.....	805.70
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Army and Navy General Hospital, for improvement and maintenance of grounds:

Under act of Congress approved August 11, 1892—

Balance on hand July 1, 1893	4,039.49
Disbursed during the year.....	3,043.05

Balance on hand June 30, 1894.....	996.44
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Artificial limbs, 1891:

Balance on hand July 1, 1893.....	495.09
Carried to surplus fund	495.09

Artificial limbs, 1892:

Balance on hand July 1, 1893.....	26,773.20
Error in statement of balance on hand	1,086.85

Total to be accounted for	27,860.05
Disbursed during the year	\$500.40
Transferred to surplus fund	26,993.77
	<u>27,494.17</u>

Balance on hand July 1, 1894	365.88
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Artificial limbs, 1893:

Balance on hand July 1, 1893.....	39,238.47
Refunded during the year to cover lost checks	150.00

Total to be accounted for.....	39,388.47
Disbursed during the year	4,823.55

Balance on hand June 30, 1894.....	34,564.92
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Artificial limbs, 1894:

Appropriated by act of Congress approved March 3, 1893	645,000.00
Disbursed during the year	586,391.44

Balance on hand June 30, 1894	58,608.56
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Appliances for disabled soldiers, 1892:

Balance on hand July 1, 1893.....	28.40
Carried to surplus fund.....	28.40

Appliances for disabled soldiers, 1893:

Balance on hand July 1, 1893.....	245.17
Disbursed during the year.....	191.59

Balance on hand June 30, 1894	53.58
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Appliances for disabled soldiers, 1894:

Appropriated by act of Congress approved March 3, 1893.....	2,000.00
Disbursed during the year.....	1,086.42

Balance on hand June 30, 1894.....	913.58
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Expended in furnishing trusses for disabled soldiers under the Revised Statutes, sections 1176 to 1178, and act of March 3, 1879.....

7,416.79

For support and medical treatment of destitute patients in the city of Washington, D. C.:

Appropriated by act approved March 3, 1893	19,000.00
Disbursed during the year.....	19,000.00

LIBRARY OF THE SURGEON-GENERAL'S OFFICE.

The following table shows the additions made to the library during the fiscal year:

Description.	On hand June 30, 1894.	Added during fiscal year.	Total June 30, 1894.
Medical journals.....	32, 215	1, 082	33, 297
Medical transactions.....	4, 699	214	4, 913
Bound theses.....	1, 663	.....	1, 663
Bound pamphlets	2, 258	346	2, 604
Other medical books	69, 818	2, 272	72, 090
Total.....	110, 653	3, 914	114, 567
Medical theses	53, 980	2, 258	56, 238
Medical pamphlets.....	* 118, 507	9, 053	127, 560
Total.....	172, 487	11, 311	183, 778

* Of the total number of single pamphlets on hand June 30, 1894, there were bound during the year 2,802, in 343 volumes.

There were presented to the library during the year 1,225 books and 10,258 pamphlets and journals.

Volume xv of the Index Catalogue, including from "Universidad" to "W," forming a volume of 842 pages, has been completed and is now in the printer's hands. The edition will be distributed, as soon as bound, to those institutions and persons who have received the previous volumes. The preparation of the manuscript of Volume xvi is already well advanced.

ARMY MEDICAL MUSEUM.

The total number of specimens received during the fiscal year was 1,363. The number of old microscopic specimens discarded as worthless was 1,357. The total number of specimens in the museum June 30, 1894, is 32,269. The following statement shows the details of additions, transfers, etc., in the different sections:

Pathological section:	
In museum June 30, 1893.....	10, 513
Transferred to provisional pathological section during the year.....	1
	<u>10, 512</u>
Discarded during the year	2
	<u>10, 510</u>
Received during the year	146
	<u>10, 656</u>
In museum June 30, 1894.....	<u>10, 656</u>
Anatomical section:	
In museum June 30, 1893.....	3, 452
Received during the year.....	117
	<u>3, 569</u>
In museum June 30, 1894,.....	<u>3, 569</u>
Section of comparative anatomy:	
In museum June 30, 1893.....	1, 717
Received during the year.....	0
	<u>1, 717</u>
In museum June 30, 1894.....	<u>1, 717</u>

Microscopical section:

In museum June 30, 1893.....	12, 770
Discarded as worthless.....	1, 357
Added during the year	620

In museum June 30, 1894..... 12, 033

Miscellaneous section:

In museum June 30, 1893.....	1, 640
Received during the year	254

In museum June 30, 1894..... 1, 894

Provisional pathological section:

In museum June 30, 1893.....	1, 413
Transferred from pathological section during the year.....	1
Received during the year.....	179

In museum June 30, 1894..... 1, 593

Provisional anatomical section:

In museum June 30, 1893.....	760
Received during the year	47

In museum June 30, 1894..... 807

RECAPITULATION.

Total number of specimens in museum June 30, 1893.....	32, 265
Discarded during the year	1, 359

30, 906

Total received during the year..... 1, 363

Total number in the museum June 30, 1894..... 32, 269

The Army Medical Museum has been visited during the year by 50,675 persons.

The following are some of the more interesting specimens added to the museum collection during the fiscal year ending June 30, 1894:

An anencephalous human foetus. Presented by Dr. L. L. Friedrich, Washington, D. C.

An anencephalous human foetus with spina bifida and bifid uvula. Presented by Dr. W. S. Leech, Morristown, Tenn.

A cyclocephalus human foetus. Presented by Dr. W. J. Dillenbach, Washington, D. C.

The head of a cyclocephalous foetal calf. Presented by Mr. Devlin, Fort Assinniboine, Mont., through Capt. C. E. Woodruff, assistant surgeon, U. S. Army.

The skull and brain of a cyclocephalus foetal colt. Presented by Dr. C. B. Robinson, v. s., Washington, D. C.

A monstrous lamb, showing partial duplication of the thorax and an additional forelimb. Presented by the U. S. National Museum, Washington, D. C.

A human foetus, showing meningocele. Presented by Lieut. F. T. Meriwether, assistant surgeon, U. S. Army.

A series of three casts showing cleft palate. Presented by Dr. P. W. Moriarty, Harvard University, dental department, Boston, Mass.

The internal genital organs of a woman aged 31 years, who died thirty-three days after coitus from rupture of tubal pregnancy. Presented by Dr. W. C. Woodward, Washington, D. C.

Four specimens of mycetoma or fungous foot of India. Presented by Lieut. Col. Wellington Gray, brigade surgeon, Bengal army, professor of surgery Grant Medical College, Bombay, India.

The skull of a Chinese woman, showing excessive thickness of bone, osteitis deformans. Received in exchange from Mr. Gustav Goldman, medical student, Baltimore, Md.

The skull of a boy, aged 7 years, showing marked asymmetrical development of two sides. Presented by Dr. S. S. Adams, Washington, D. C.

Calvarium of a man, showing tertiary syphilis. Presented by Capt. W. L. Kneedler, assistant surgeon, U. S. Army.

- A pelvis showing exostoses of the acetabulum, and kidney showing hemorrhagic clot. From a soldier who was shot in the leg August 16, 1864; amputation in lower third of thigh August 17, 1864; reamputation at hip joint May 15, 1870; death twenty-nine years and five months after injury. Presented by Lieut. Col. W. H. Forwood, deputy surgeon-general, U. S. Army.
- The upper jaw and adjacent bones of a horse, showing a large sarcoma. Presented by Dr. C. B. Robinson, v. s., Washington, D. C.
- A specimen of cancer of the pharynx and œsophagus, with œsophago-tracheal fistula; from a colored woman, aged 50 years. Presented by Dr. E. F. King, Washington, D. C.
- A large calculus from Steno's duct of a horse. Presented by Dr. C. B. Robinson, v. s., Washington, D. C.
- Specimens of tuberculosis of lungs, bronchial glands, ileum and mesenteric glands; from a female infant, 4 months old. Presented by Dr. S. S. Adams, Washington, D. C.
- A heart weighing 33 ounces, showing hypertrophy, dilatation, and valvular disease; from a soldier. Presented by Lieut. Col. W. H. Forwood, deputy surgeon-general, U. S. Army.
- A heart showing aortic valve in two segments and immovable from calcareous deposits; from a white man, aged 33 years, who had been attending actively to business (mining engineer) up to the time of his death. Presented by Dr. W. C. Woodward, Washington, D. C.
- A heart which shows a gumma involving the interventricular septum; from a colored man, aged 33 years. Presented by Dr. W. C. Woodward, Washington, D. C.
- A stomach, showing perforating sarcomatous ulcer; from a woman, aged 37 years. Presented by Capt. W. C. Gorgas, assistant surgeon, U. S. Army.
- Portions of stomach and duodenum of a horse which died of rupture of the former. A large number of larvæ of the botfly were found attached to the stomach and duodenum. Presented by Dr. C. B. Robinson, v. s., Washington, D. C.
- The lower end of ileum and a portion of ascending colon, showing in the latter a cicatrix following shot perforation. Post-mortem thirty-two years after the receipt of the injury. From a soldier. Presented by Dr. W. T. Councilman, Boston, Mass.
- A liver and a plaster cast of the same, colored after nature, showing cancer nodules. The liver weighed 29½ pounds. From a negro, aged 54 years. Liver presented by Dr. F. J. Shadd, Washington, D. C. Cast prepared at the Army Medical Museum.
- Specimen of dilatation of the bile ducts and gall bladder with cancer of the pancreas; from a man, aged 58 years. Operation by Dr. E. F. King, connecting the gall bladder and small intestine by fistula. Presented by Dr. E. F. King, Washington, D. C.
- Specimens of shot perforation of liver and fracture of vertebra. Patient lived one month. Presented by Capt. G. E. Bushnell, assistant surgeon, U. S. Army.
- Specimen of primary cancer of the gall bladder; from a soldier, aged 64 years. Presented by Lieut. Col. W. H. Forwood, deputy surgeon-general, U. S. Army.
- A gallstone weighing 185 grains; found in an old cemetery. Presented by Dr. A. McWilliams, Washington, D. C.
- A spleen from a colored girl, aged 18 years, showing tuberculosis. Presented by Dr. W. C. Woodward, Washington, D. C.
- Specimens of tuberculosis of spleen and greater omentum; from an ox. Presented by Dr. D. E. Buckingham, v. s., Washington, D. C.
- The spleen and liver of a mule, showing angiomatous tumors. Presented by Dr. C. B. Robinson, v. s., Washington, D. C.
- A kidney converted into a sarcomatous mass, weighing 58 ounces; from a white man, aged 65 years. Presented by Dr. C. V. Boarman, Washington, D. C.
- Specimen of cancer of left kidney with angio-sarcoma around right kidney; from a soldier, aged 26 years. Left testicle had been removed for cancer. Presented by Maj. A. A. Woodhull, surgeon, U. S. Army.
- Specimen of tuberculosis of the kidney; from a negro woman, aged 25 years. Presented by Dr. D. S. Lamb, Washington, D. C.
- A kidney showing pyo-hydronephrosis; successful nephrectomy; from a white girl, aged 16 years. Presented by Dr. I. S. Stone, Washington, D. C.
- A kidney showing pyo-hydronephrosis; removed by operation; from a man, aged 63 years. Presented by J. Taber Johnson, Washington, D. C.
- The head of the penis of a horse 10 years old, showing epithelioma. Recovery after amputation. Presented by Dr. C. B. Robinson, v. s., Washington, D. C.
- Fibromatous tumor involving the distal end of penis of a horse 14 years old. Recovery after amputation. Presented by Dr. C. B. Robinson, v. s., Washington, D. C.
- Specimen of fibro-adenoma of testicle; from a soldier, aged 34 years. The patient recovered after the removal of the testicle. Presented by Lieut. Charles Lynch, assistant surgeon, U. S. Army.

- Specimen of fibroma of ovary; from a white woman, aged 67 years; specimen removed by laparotomy. Presented by Dr. J. Taber Johnson, Washington, D. C.
- Specimen of myo-fibroma of the uterus, weighing nearly 14 pounds; from a colored woman, aged 32 years. The patient recovered after excision of the tumor. Presented by Dr. I. S. Stone, Washington, D. C.
- Specimen showing myoma of uterus, dermoid cyst of ovary and pyosalpinx; from a white woman, aged 51 years. Presented by Dr. J. Taber Johnson, Washington, D. C.
- A series of thirty models showing forms of diseases of the skin and subcutaneous tissue. Prepared by J. Baretta, Paris, France. Purchased.
- A model showing the central nervous system. Made by Rudolph Jung, Heidelberg, Germany. Purchased.
- The brain of a Tonto Indian. Presented by Maj. W. Matthews, surgeon, U. S. Army.
- A series of four corrosion injections of the arteries of the upper and lower extremities of infants at term. Prepared by Dr. E. R. Hodge, anatomist, Army Medical Museum.
- A model of the human larynx, enlarged. Presented by Dr. H. Kronecker, Berne, Switzerland.
- A series of four wax models showing the development of the labyrinth and acoustico-facial region of the human embryo. Prepared by F. Ziegler, Freiburg in Baden, Germany. Purchased.
- A series of six wax models showing the development of the human teeth. Prepared by F. Ziegler, Freiburg in Baden, Germany. Purchased.
- Models of dissections of the head and neck, arm and hand, and leg and foot of an adult, showing the muscles, arteries, veins, and nerves. Prepared by Emile Deyrolle, Paris, France. Purchased.
- A series of eight wax models of brains of different animals. Prepared by Emile Deyrolle, Paris, France. Purchased.
- Seventysets of longitudinal sections of bones from man and the lower animals. Prepared by Dr. E. R. Hodge, anatomist, Army Medical Museum.
- A series of bullets showing deformations by impact with ground and hard substances. Presented by Capt. C. E. Woodruff, assistant surgeon U. S. Army.
- A set of Dr. H. A. Kelly's ureteral instruments, with calibrator and extra catheter. Made and presented by F. Arnold & Sons, Baltimore, Md.
- Four hundred and seventy-six slides of sections of human embryos, containing 3,256 sections. Prepared by Dr. W. M. Gray, microscopist, Army Medical Museum.

ARTIFICIAL LIMBS.

During the fiscal year there were furnished under the laws relating to artificial limbs 343 artificial legs, 4 arms, 2 feet, and 2 apparatus; and the commuted value of an artificial leg was paid in 2,997 cases of amputation, of an artificial arm in 3,184 cases, and of an artificial foot in 72 cases. Commutation was paid also in 3,496 cases in which the use of a limb was lost. The money expended consisted of \$586,391.44 from the appropriation for the year, \$4,823.55 from the appropriation for 1893, and \$500.40 from that of 1892, a total of \$591,715.39.

There are at the present time 16,750 approved cases of loss of limb or loss of use of limb on the rolls, 3,395 cases of loss of arm, 3,603 cases of loss of leg, 99 of loss of foot, and 9,653 of loss of use of limb. These cases come up for payment every three years. Their commutation value amounts to \$927,575, but as about 500 cases elect to be furnished with limbs in kind, this sum has to be increased by about \$20,000 for the transportation of these maimed soldiers from their homes to the place of manufacture and return. The expense of transportation, which is paid by the Quartermaster's Department, and is refunded to that department out of the appropriation for artificial limbs, is an uncertain amount, depending chiefly on the distance traveled. From some calculations made in this office it is found to average about \$40 per case. The sum of about \$950,000 would therefore be required every three years to meet the requirements of existing legislation in the cases now on the rolls.

The expenditures from this sum are, however, not equably distributed over the three years, as may be seen from the following statement of the present condition of the rolls:

	Cases due during the years ending June 30—					
	1894.		1895.		1896.	
	Cases.	Value.	Cases.	Value.	Cases.	Value.
Arms, artificial, at \$50 each.....	3, 188	\$159, 400	137	\$6, 850	70	\$3, 500
Legs, artificial, at \$75 each	3, 340	250, 500	162	12, 150	101	7, 575
Feet, artificial, at \$50 each.....	74	3, 700	13	650	12	600
Loss of use of limb, commutation, \$50...	3, 498	174, 900	3, 849	192, 450	2, 306	115, 300
Annual total.....	10, 100	588, 500	4, 161	212, 100	2, 489	126, 975

Total cases, 16,750; value, \$927,575.

The commutation value of the cases matured during the year ending June 30, 1894, amounted to \$588,500; and as only 351 of the cases involved transportation to obtain limbs in kind, the total expenditure from the appropriation of this year will probably not exceed \$604,000; of which sum \$591,715.59 has, as stated above, already been expended.

The commutation value of the cases which become due during the fiscal year 1895 is \$212,100, which will be increased to \$213,000 by the expense of transportation. It must be remembered that the men who are entitled to benefit under the laws relating to artificial limbs are dropping from the list by death at the rate of about 1.6 per cent annually. This calculation of the present mortality is based upon statistics which were summarized on page 10 of the Report of the Surgeon-General, 1892. When the cases falling due in 1895 come to be paid about 4.8 per cent of the sum above estimated will not be required on account of deaths during the three years since these cases were last paid. The sum of \$203,000 will probably cover the expenditures of this year, but as only \$194,000 has been appropriated in the sundry civil bill for the year, cases to the amount of \$9,000 maturing toward the end of the year will have to lie over for settlement until the beginning of the fiscal year 1896.

It will be seen from the above tabulation that there are in the file boxes of this office 2,489 cases which mature in the year ending June 30, 1896, calling for an expenditure of \$126,975, or including transportation to have limbs fitted, \$127,500. Deducting 4.8 per cent for deaths reduces this estimate to, in round figures, \$121,000, and \$9,000 added for the cases left unsettled from the previous year makes the sum needful for the year ending June 30, 1896, \$130,000.

In these estimates no allowance has been made for new cases, as of late very few of these have been added to the rolls.

TRUSSES AND APPLIANCES.

The number of trusses issued during the year was 986; the number of surgical appliances, 133.

ARMY AND NAVY GENERAL HOSPITAL.

The capacity of the hospital is 80 beds, 16 for officers and 64 for enlisted men. The officers' division is open between the 1st of October and the last of June. Formerly there has been difficulty in accommodating all the applicants in the winter, but this was not the case during the past season. Fifteen officers, half the number of last year, were

treated this year. Of these, 9 were on the active list of the Army, 1 retired, 1 recommended for retirement, 2 on the Navy active list, and 2 retired. Of the active Army officers 4 recovered their health and 5 were improved but not fit for duty when they left the hospital upon a continuance of sick leave. Of the active Navy officers 1 recovered, but the other did not improve and has since been retired. The average residence of the 5 who recovered was 94 days.

From all sources this year 101 enlisted men were admitted, against 84 the year before; and of the whole 82 were soldiers formally received from other commands, against 75 the previous year. At the beginning of the year there were 21 soldiers in hospital and at its close 16; there were therefore 87 completed cases, against 69 in the fiscal year 1893. Of these completed cases 1 died, 19 were discharged for disability, 1 by purchase, 3 by order (without honor), 2 were transferred to other stations still ill, 2, who were on furlough, resumed their status improved, and 59, or nearly 68 per cent of the whole, were returned to duty, against 58 per cent during the previous year. Of 48 completed cases of rheumatism 29, or 60 per cent, went to duty, the proportion being the same as last year, when the numbers were 40 cases and 25 to duty. Of 19 discharged for disability the ability of 10, or 52 per cent, to support themselves by manual labor was reckoned at one-half or more. The subsequent histories of 49 cases in the calendar year 1893 returned to duty at other stations show that six months after leaving hospital, 36, or more than 73 per cent, remained well. The proportion the year before was 78 per cent. The average residence in hospital of the completed cases was 109 days; those returned to duty were present 72, and those discharged for disability 152 days. The latter figures last year were 105 and 104, respectively.

It still remains true that the full capacity of the hospital is not utilized, and medical directors are advised to recommend more transfers of appropriate cases. Among those returned to duty this year were several men whose discharge for disability had been recommended by post surgeons. Occasional cases not adapted to the place appear to have been sent there. Pulmonary cases do not do well. The commanding officer recommends that no man be sent who does not have a "good" military character. I approve of this.

Besides the usual allowance of \$600 for minor repairs to the hospital, there was an allowance of \$1,309.92 for more important work. This money has been expended in repainting the exterior brickwork, extending the steam heating, lowering the bath-house ceilings to economize heat, and repairing wear and tear. From a special appropriation made year before last for the improvement of the grounds, \$3,043.05 was expended in boundary walls, fences and gates, and other masonry, in the care of plants, and in the change of site of the stable and wagon shed. There remains unexpended \$996.44, which is being used in introducing new hot-water pipes and other similar improvements.

The commanding officer renews his recommendations for the introduction of electric light, and that cottage quarters be built on the grounds for the junior medical officer and the quartermaster, who are now required to live in the town of Hot Springs. I concur in these recommendations.

PROVIDENCE HOSPITAL.

Under the provisions of the act of August 3, 1893, making appropriation of \$19,000 "for the support and medical treatment of ninety-five medical and surgical patients who are destitute in the city of

Washington, under a contract to be made with the Providence Hospital by the Surgeon-General of the Army," a contract was duly entered into with the institution named, and has been fulfilled to my satisfaction and without complaint on the part of the persons sent there for treatment. The following is a statement of the amount of relief afforded under the appropriation:

Number of patients in hospital July 1, 1893	94
Number of patients admitted during the year	957
<hr/>	
Total number of patients treated	1, 051
Average number of patients admitted per month	80
Number remaining in hospital June 30, 1894	106
Total number of days' treatment afforded	37, 790
Average number of days' treatment per patient	36
Average number of patients treated per day	104
Longest term of treatment (days)	365
Shortest term of treatment (days)	1
Number of patients in hospital during the whole year	27

The patients included in the statement represent all classes of diseases, acute and chronic, except those of a contagious nature. The patients shown as having remained in hospital during the whole year are incurable, without home or friends.

MEDICAL OFFICERS.

During the fiscal year ending June 30, 1894, the Medical Department of the Army lost 11 of its members, 1 by death, an assistant surgeon-general with the rank of colonel, and 10 by retirement; 2 assistant surgeons-general with the rank of colonel; 2 deputy surgeons-general with the rank of lieutenant-colonel; 3 surgeons with the rank of major, and 3 assistant surgeons with the rank of captain.

Promotions were made during the year as follows: Two deputy surgeons-general with the rank of lieutenant-colonel, to be assistant surgeons-general with the rank of colonel; 4 surgeons with the rank of major, to be deputy surgeons-general with the rank of lieutenant-colonel; 7 assistant surgeons with the rank of captain, to be surgeons with the rank of major, and 5 assistant surgeons with the rank of first lieutenant, to be assistant surgeons with the rank of captain.

An Army medical examining board was convened in October, and remained in session during the month for the examination of candidates to fill the vacancies then existing. Thirty-seven candidates were invited to appear before the board. One of these failed to appear, 1 declined examination, 1 withdrew after partial examination, 9 were rejected for physical disability, and 20 for professional disqualifications, while 5 were found qualified and were thereafter appointed assistant surgeons with the rank of first lieutenant.

At the close of the year there were ten vacancies in the number of appointments then allowed by law, and a board had been convened to select the individuals to fill these vacancies; but inasmuch as the Military Committee of the House of Representatives, in drafting the Army appropriation bill for the current year, seemed to regard a reduction of the numerical strength of the Medical Corps as desirable, the order convening the board was at my request rescinded, and the candidates who had been invited to appear for examination were notified of the indefinite postponement of the examinations. The bill when passed directed that the number of assistant surgeons be reduced to 110, a loss to the corps of 15 young officers instead of 35, as originally proposed.

In the report of the Committee on Military Affairs to accompany H. R. 6373, the appropriation bill above mentioned, certain reasons were given in support of the recommendation of the committee to reduce the Medical Department which appear to be founded on a misapprehension of the facts. The report says: "When this department was reorganized by law in 1869 there were 210 military posts and stations in the country. This number has already been greatly reduced, so that there are now but 120 military posts and stations, and a still further reduction is proposed and will be effected within a few years. It is evident that if 193 officers in this department were sufficient when the number of posts and stations was 210, there can be as great a reduction as is proposed in this bill when the number of posts and stations is reduced to 120."

As a matter of fact there were 184 acting assistant surgeons in service in 1870, after the reorganization referred to, and these acting assistant surgeons performed all the duties of junior medical officers. They were made responsible for medical property and were ordered wherever their services were required, in the field with troops, as assistants at large posts, and as post surgeons at small posts. As the number of posts was reduced and the exigencies of the service permitted, their number was reduced as follows: In 1875 to 150, in 1880 to 111, in 1885 to 58, in 1890 to 48, in 1892 to 22.

In the bill making appropriations for the support of the Army for the year ending June 30, 1893, no appropriation was made for acting assistant surgeons, and no contract has been made for such service since that date. At present private physicians can be employed only by the visit, and there is no provision of law by which they can be placed in charge of the medical department at a military post. They are therefore not available for taking charge of a post hospital and the medical and hospital property necessary for the care of the sick and wounded of a garrison, or for the discipline and drill of the hospital corps detachment, for the sanitary supervision of the post, or for medical services to the families of officers and enlisted men.

On page 4 of the report of the committee it is stated that, "It may be necessary in several instances to employ outside attendance of physicians for the smaller posts, but that can always be done and efficient services secured at the cost of from one-fifth to one-fourth of the present average of salaries of the officers of the corps." As a matter of fact, private physicians have been employed during the past year and are now employed at all the arsenals of the country. The number of men at these stations is comparatively small, and a saving is made by paying for medical services by the visit. But it is a mistake to suppose that private physicians could be employed at garrisoned posts, whether large or small, at the low estimate cited above. Indeed, I question if there are more than half a dozen posts in the country where satisfactory medical attendance could be provided at less cost than the pay of an assistant surgeon of the Army, \$133.33 per month. Moreover, a post medical officer has various and important duties to perform in addition to caring for the sick. In fact, his presence as a member of the garrison is more important than that of any other officer, for no other officer can perform his duties, whereas any line officer present can perform the duties of quartermaster, commissary of subsistence, adjutant or commanding officer, of a company or garrison. The Major-General Commanding, on page 12 of the committee's report, is cited as saying: "At military posts it is, in my judgment, impracticable to

supply the necessary service, including that in the hospitals, in any other way than through the regular commissioned officer."

The report of the military committee further says: "In time of peace these men (enlisted men) should be, generally speaking, in sound health, physically and mentally." Great care is exercised in the examination of recruits, and they are in sound health physically and mentally at the date of enlistment; but, under the most favorable circumstances, a considerable number require the services of a physician after enlistment. This is shown by the fact that at the three recruiting depots, all in comparatively healthy locations, the average number on sick report every day during the year ending December 31, 1893, was—

At Columbus Barracks, Ohio	57.68
At Davids Island, N. Y.	24.80
At Jefferson Barracks, Mo.	24.49

The average number at Fort Clark, Tex., garrisoned by 314 officers and men, was 25.05; at Fort Myer, Va., garrisoned by 259, 16.21. It may be observed also that these averages represent the number borne on sick report; probably an equal number at every post has to be examined and prescribed for although not taken up on sick reports.

Again, an important part of the duty of a medical officer in a garrison is to decide whether enlisted men who report themselves sick, are in reality unfit to perform their duties, or whether they feign sickness for the purpose of avoiding these duties. A private physician called in by the visit is not present at sick call to determine this question, and when it is left to the decision of a nonprofessional person, a company officer, or noncommissioned officer, for instance, the man who feigns sickness has a better chance of success, and the really sick man is often compelled to do duty because he is suspected of malingering.

It is, however, when troops are ordered out for active service that the weakness of a Medical Department, consisting in part of medical men attending and paid by the visit, would be mainly felt. The principal reason for supporting an army in time of peace is that an efficient organization may be maintained which will be ready for service in any emergency and serve as a nucleus for the larger army which will be required in case of war. This applies to the Medical Department as well as to the fighting force. The duty of our medical officers is not only to attend the sick at their stations, acting at the same time as health officers for their command, but to be prepared, and to prepare their hospital-corps detachments, for any emergency, and especially for field service. The call to service in the field is more common in our Army than is generally supposed. During the year 1893 the number of men constantly in the field was 789, as reported by the 69 medical officers who were out with the various detachments which constituted the average field strength. The largest number of medical officers out in one month was 23, in September, with detachments aggregating 2,954 men, and giving an average strength for the month of 1,663 men. It is for such field service that the need of the junior officers of the Medical Department is chiefly felt. In 1892, 76 medical officers were on field service, the average number of men thus serving having been 1,010. In 1891, 93 medical officers were out with various detachments of troops having an average strength of 899 men, and in 1890, 143 medical officers with an average strength of 1,210 men. If attendance on the sick at military posts be made the gauge of the strength of the Medical Department no provision of medical officers can be made for troops on active service unless certain posts be deprived of their medical officers.

During the recent troubles at Chicago, Ill., when 1,775 men were suddenly concentrated in that city, 3 medical officers on leave of absence threw up the unexpired portion of their leaves and reported for duty with the troops, and thus helped out the department in the emergency.

It must be remembered also that medical officers are as liable as other officers to break down under the exposures and accidents of field service or from other causes. During the past three years a little over 5 per cent of them have been constantly noneffective from sickness, or 10 officers of the 192 allowed by law up to the time of the passage of the current appropriation bill.

Again, these officers are as much entitled as other officers to leaves of absence; but inasmuch as the Regulations of the Army prescribe that leaves will not be granted "so that a post will be left without competent medical attendance," many of the officers of the Medical Corps have to do, year after year, without leaves such as are enjoyed by others. During the past ten years the leaves of absence granted to medical officers were equivalent to an average leave annually of a little less than 14 days for each. To enable the department to permit its officers to have one month's leave annually, and at the same time provide competent medical attendance at posts, a strength of 8.3 per cent is needful over and above that necessary to man the posts.

In view of these considerations I regard with regret the policy which has cut off 15 officers from the department.

I add here the views and opinions of the Major-General Commanding the Army and of the general officers commanding departments:

J. M. SCHOFIELD, MAJOR-GENERAL COMMANDING ARMY, *March 15, 1894*: It would, in my judgment, be seriously injurious to the military service to so reduce the officers of the Medical Corps that there would no longer be the necessary number of surgeons for permanent duty at the various military posts. Medical service may doubtless be employed for officers stationed in cities, and perhaps in some cases at much less expense than the salaries of a surgeon; yet when it is remembered that the Army surgeons stationed in cities, besides attending officers there, perform the very important duty of examining recruits, it is probable that the service rendered is less expensive as well as far more efficient than that which could be hired by the visit. At military posts it is, in my judgment, impracticable to employ the necessary service, including that in the hospitals, in any other way than through the regular commissioned officer.

So far as I am informed the experience of late years shows that the Medical Corps of the Army is none too large for the necessities of the service.

If these views meet the concurrence of the Secretary of War, I respectfully suggest that they be communicated to the committees in Congress having this matter in charge.

OLIVER O. HOWARD, MAJOR-GENERAL, COMMANDING DEPARTMENT OF THE EAST, *April 4*: In reply to your letter of the 19th ultimo, I have the honor to state that there are no medical officers on duty in my department whose services can be spared without prejudice to its interests, unless, of course, other officers are sent in their places.

There are at present on the roster of this department 37 medical officers; of these, 1 (the medical director) is on detached service in Europe, 1 (Maj. Cleary) is present, sick, 1 (Capt. Ball, temporarily attached) is absent on leave, 1 (Maj. Comegys) is present, sick, on partial duty, and 33 are present for duty.

Of this number 3 (Capts. Crampton, Wood, and Shannon) are assigned as attending surgeons and examiners of recruits in Baltimore, Boston, and New York, and the remaining 30 are distributed to the 26 different posts throughout the department, as follows, viz: One post (Washington barracks), where there is a considerable detachment of the Hospital Corps being trained for service, has 3 medical officers; 6 of the largest posts have 2; 16 posts 1 (the post surgeon, Maj. Comegys, at Fort Wadsworth being sick, is temporarily assisted by a civilian practitioner); 2 posts (Fort Wood and Newport barracks) have none, the sick being cared for by medical officers from neighboring stations; and 1 post (Key West barracks) is under the professional care of a civilian practitioner, fortunately of previous Army service.

It is desirable that a medical officer be assigned to duty at Key West barracks; with this addition the number in the department will be barely sufficient to perform the very exacting duties of the medical and sanitary service.

I am decidedly of the opinion that the services of a private physician, employed by the visit, can not be substituted for those of a medical officer in any military command without a very considerable sacrifice of the public interests; the duties of a medical officer for the Army require close attention to a large field of special work hardly at all in the line of civilian practice.

Civilian practitioners might be employed in the cities as attending surgeons and examiners of recruits, but it is doubtful if such could be obtained who would fit themselves for the latter duties, if only temporarily employed, and, as the charges of competent civilians are high, it is believed that efficient service could not be had from this source except at greater expense than the cost of the medical officer. With troops, under the varied conditions of service, a special class of physicians trained in the service is indispensable; the duty of these is to understand, anticipate, and meet conditions wholly out of the line of civilian practice; and without them experience has shown that the troops must endure great additional suffering in actual service. Such a class is not to be found in civil life; it is not the creation of a day, but the result of careful training and experience, and becomes especially valuable to the Government largely through such experience, and the knowledge gained in the performance of its duties in the public service.

The necessity for a medical department is recognized in all armies, and since its necessity is admitted, it is without dispute important that its efficiency should be maintained at the highest possible level, that it may not be found, when the emergency arises, in a condition of collapse.

NELSON A. MILES, MAJOR-GENERAL, COMMANDING DEPARTMENT OF MISSOURI, *March 27, 1894*: I have the honor to reply, in answer to questions contained in your communication of the 19th instant, as follows:

1. That none of the medical officers now on duty in my department can be spared without prejudice to the best interests of the service.

2. That there are no additional medical officers required in this department.

3. I do not think it would be advisable to depend upon private physicians at any of the military posts in this department; in fact, I think it would be a mistake to adopt such a system. The surgeon should be available at all times, not only to attend to the sick and disabled while in garrison, but be entirely free to move with the command instantly to any part of the country, and go with the troops into battle, where the services of experienced, well-trained surgeons are indispensable to the efficiency of the troops.

JOHN R. BROOKE, BRIGADIER-GENERAL, COMMANDING DEPARTMENT OF THE PLATTE, *March 27, 1894*: I have the honor to acknowledge the receipt of your letter of the 19th instant, in which, referring to the incorporation into the pending appropriation bill of a provision for the gradual reduction of the number of assistant surgeons from 125 to 90, you request me to state certain facts relative to the medical service in this department and pertinent to the question of the expediency of the proposed reduction. In reply, I beg to advise you as follows:

The number of medical officers on duty at the several posts in the department is sufficient for the performance of the duties devolving upon them at the present time. It is not, however, more than sufficient, and none could be spared without prejudice to the interests of the public service.

The employment, by the visit, under Army Regulation 1637, of private physicians living near military posts requiring medical attendance, does not in the long run conduce to the advantage of the service in my judgment. It has been tried at 2 of the smaller posts in the department—Fort Sidney, Nebr., and Camp Pilot Butte, Wyo. In neither case was the result satisfactory, except that it effected a slight saving in expense. The only available physician at the former post was reported as lacking the requisite qualifications for the work; and although there was no objection on the score of incompetency to the civilian doctor, who, in the absence of a medical officer, performed the sanitary service at Pilot Butte from August 10, 1893, to March 9, 1894, the management of the hospital, the discipline of the hospital corps detachment, and the care of the hospital property, was not what it ought to have been and would have been had such an officer been on duty at the camp.

The above statement is believed to be a full answer to the specific questions propounded. I would add, that as commander of various frontier posts for more than twenty years of my life, I found the proper supply of medical attendance to be among the most serious and troublesome problems with which I had to deal. There is less difficulty in this respect at this time; but even now, as department commander, I find it not always an easy matter to secure the services of medical officers for troops when detached from their posts for duty in the field. It must be borne in mind that not only the health of the individuals composing a military command, but also its discipline as a body depends in a large degree upon the medical officer who is assigned to duty with it. A sufficient knowledge of medicine and surgery, though essential, does not complete the requisite professional equipment of the military physician. To be thoroughly efficient as such, he must be conversant with the

ways and customs of the service, the peculiar characteristics of its personnel, and the requirements of discipline; and an acquaintance with these can be acquired only by actual service with troops for a period of years.

After a careful consideration of the subject I am fully convinced that the Medical Department, as now constituted, is none too large, and that its reduction would lessen the efficiency of the military service.

A. McD. MCCOOK, BRIGADIER-GENERAL, COMMANDING DEPARTMENT OF COLORADO: Your communication of March 19, 1894, relative to the proviso of Army appropriation bill reducing the number of assistant surgeons as vacancies occur to 90, is this day received.

I have the honor to reply to your questions in order, as follows:

(a) "Whether any of the medical officers now on duty in your department can be spared without prejudice to the interests of the service; and, if so, where the officers whose services can be dispensed with are now stationed?"

In my opinion and to the best of my information no medical officer in this department can be spared without prejudice to the interests of the service. This is one of the largest military departments in the United States; the posts are widely scattered over sparsely settled regions, and in many cases at a distance from railroads or towns. The garrisons generally are large, and the officers, troops, and families are entirely dependent upon the post surgeon in sickness, epidemics, and accidents.

The constant calls for movements of troops in connection with Indian affairs, troubles on the Mexican boundary, etc., make it necessary that at all the larger posts 2 medical officers should be stationed, that troops so moving may be accompanied by a medical officer, while the garrison remaining may not be deprived of medical help.

(b) "Whether any additional medical officers are required in your department; and, if so, at what stations?"

In my opinion the larger posts, as Huachuca, Whipple barracks, Wingate, Grant, Bayard, Logan, Douglas, and Apache should have 2 medical officers assigned, as is the case at present, and so far as I can see, no other medical officers are now needed, as in the case of need 1 officer can be temporarily withdrawn from any of these posts for temporary assignment in an emergency; but I am of the opinion that the number should not be further reduced, as great inconvenience may be experienced in cases of illness among the medical officers, expeditions, or any emergency calling for medical assistance.

(c) "Whether the services of private physicians living in the vicinity of military posts in your department who could be employed by the visit in case of sickness, under Army Regulation 1637, can be substituted for those of a medical officer of the Army at any post in your department without prejudice to the interests of the service; and, if so, at what posts such substitution can be made, and what saving would be effected thereby?"

The military posts of this department, with a few exceptions, are at a distance from villages or towns where physicians are residing, and even in cases where they are near, I am strongly of the opinion that neither by education nor qualifications are they suited to care for the sick at our military posts, nor would their services be generally acceptable to any of our garrisons. The constant presence of a medical officer is necessary with any body of troops, or at any military post. The care of the hospital and its supplies, the instruction and discipline of the hospital corps, the supervision of sanitary and hygienic conditions, require the services of educated and trained medical officers.

It has been necessary at times to secure the services of civilian physicians, but the results have been such as to emphatically prove that their services can not be substituted for the regular medical officers of the Army. Nor can these services be rendered "by the visit" with economy. The rates per visit and mileage are high, and the daily necessities of an ordinary post would make such services very expensive and entirely unsatisfactory.

The entire medical service of this department is, in my opinion, administered with judgment and fidelity, and I deprecate any change or reduction that may tend to render the service less efficient than it now is.

FRANK WHEATON, BRIGADIER-GENERAL, COMMANDING DEPARTMENT OF TEXAS: I have the honor to acknowledge receipt of your letter of March 19, 1894, in which you state that the Military Committee of the House of Representatives has decided to report a proviso in the Army appropriation bill reducing the number of assistant surgeons, as vacancies occur, to 90, the number at present allowed being 125; and in connection with which proposed reduction you propound the following interrogatories, with a view to transmitting my answer thereto to the honorable Secretary of War for the information of Congress:

(a) "Whether any of the medical officers now on duty in your department can be spared without prejudice to the interests of the service, and if so, where the officers whose services can be dispensed with are now stationed."

(b) "Whether any additional medical officers are required in your department, and if so, at what stations."

(c) "Whether the services of private physicians living in the vicinity of military posts in your department, who could be employed by the visit in case of sickness, under Army Regulation 1637, can be substituted for those of a medical officer of the Army at any post in your department without prejudice to the interests of the service, and if so, at what posts such substitution can be made, and what saving would be effected thereby."

In reply I respectfully submit the following:

(a) None of the medical officers now on duty in this department can be spared without manifest prejudice to the interests of the service.

(b) Additional medical officers are not required in the department at present; but in the event of any disturbance on the Rio Grande, requiring troops to take the field, as was recently the case, additional medical officers might be required, as they were then.

(c) The substitution of private physicians for medical officers of the Army in this department would probably involve expense and certainly result in diminished efficiency. Their introduction into garrisoned posts is absolutely impracticable. In all other departments of Army administration substitutes for the regular officers therein may be found by drawing on the line of the Army, the officers of which are qualified to some extent to perform any duty to which they may be assigned. In the Medical Department, however, a variety of duties aside from attendance on the sick devolve upon a surgeon that can only be performed by a commissioned officer. Therefore at least one officer of your department is indispensable in each garrisoned post of the Army, regardless of size.

Assuming that the medical service in other departments is on the same basis as is the Department of Texas, I should regard any reduction of the Medical Corps as a great misfortune to the Army.

E. S. OTIS, BRIGADIER-GENERAL, COMMANDING DEPARTMENT OF THE COLUMBIA: To the questions submitted in your communication of the 19th instant, to which you request answer, I would respectfully reply as follows:

To the first question: "Whether any of the medical officers now on duty in your department can be spared without prejudice to the interests of the service, and if so, where the officers whose services can be dispensed with are stationed."

I would answer: None can be spared. At the 7 posts of the department 9 medical officers have station, 1 of whom is now absent on leave. This, when all are present for duty, is 1 medical officer at the smaller posts and 2 at the large posts of Vancouver Barracks and Sherman. Owing to the absence of 1 medical officer from Fort Sherman, I am now a little embarrassed to secure the attendance of one with troops soon to make a march from that post to Fort Spokane.

To the second question: "Whether any additional medical officers are required in your department, and if so, at what stations."

I would answer: Yes; one at Fort Wallawalla to meet emergencies, one whose services would be available for the field without depriving a post of all medical aid, and who could temporarily relieve a medical officer if detached, ill, or necessarily absent for any reason, private or official.

To the third question: "Whether the services of private physicians living in the vicinity of military posts in your department, who could be employed by the visit in case of sickness, under Army Regulation 1637, can be substituted for those of a medical officer of the Army at any post in your department without prejudice to the interests of the service, and if so, at what posts such substitution can be made, and what saving could be effected thereby."

I would answer: No; not in any instance, and even if circumstances permitted such substitution, the constant demand which would be made for professional medical service would not result in any pecuniary saving to the Government.

P. T. SWAINE, COLONEL TWENTY-SECOND INFANTRY, COMMANDING DEPARTMENT OF DAKOTA: In reply to your letter of the 19th instant, I would state that in my opinion none of the medical officers now on duty in my department can be spared without prejudice to the service. In fact, the number is already inadequate, as I think there should be a medical officer at Fort Pembina, where now we have none, and an additional medical officer at Fort Custer.

Since June 30, 1892, no acting assistant surgeons have been employed, and all the work previously performed by them has since then devolved upon the commissioned medical officers of the Army, who, in spite of the fact that the number of military posts has been reduced, have been scarcely equal numerically to the requirements of the service.

I know of no post where the services of private physicians, employed by the visit, under paragraph 1637, Army Regulations, can be substituted for those of medical officers of the Army without prejudice to the interests of the service and to the discipline and efficiency of the Hospital Corps.

Of the 11 posts in this department, Fort Pembina is the only one that has a settlement in its immediate vicinity from which it is practicable to get medical attendance. With reference to the other 10 posts and 1 camp, the vicinage of the towns and settlements where there are physicians living varies from about 3 to 35 miles.

Convinced, as I am, of the correctness of these views, I can not but deplore any legislation having for its object the reduction of the number of medical officers of the Army at this time.

THE ARMY MEDICAL SCHOOL.

I take pleasure in reporting the successful establishment of the Army Medical School authorized by General Orders No. 51, A. G. O., June 24, 1893. The value of a special course of study for passed candidates for the military service is recognized by the medical departments of many European armies. The absolute necessity of special training for the officers who are to be intrusted with the great responsibility of keeping the Army in its best sanitary condition was demonstrated in the British service during the progress of the Crimean war; and their Army Medical School was a product of the experience so dearly bought in that war. It has been in continuous and successful operation since 1857. The duty of an army medical officer is to preserve the efficiency of his command by guarding it against unsanitary influences and preventing disability from diseases that are known to be preventable. To this end he examines every candidate for enlistment, rejecting those who have any imperfection of physique or taint or weakness of constitution that would probably result in disability under the ordinary exposures of active military service; and he exercises a careful supervision over the health of the soldiers, that the sound physique brought with them into service may not be injured needlessly. To accomplish this in a satisfactory manner requires special training. Any well-educated medical man may be placed in the wards of a hospital and intrusted professionally with the care of its sick; but this, although of high importance, and particularly from the point of view of the patient, is a minor duty compared with that of preventing or suppressing the sickness that would otherwise fill the wards. The medical graduate, equipped as a general practitioner, is not qualified for such duty. Some of our medical officers have not only recognized this defect in the qualifications of their juniors, but have appreciated how much better their own early work might have been had their education been perfected as is that of the British medical officer at the Army Medical School at Netley, England. I need hardly say, therefore, that the want of such a school in this country has been greatly regretted, particularly by those who are conversant with the work of the European schools. The absence of facilities—of teachers, lecture rooms, laboratories and their equipment—has always presented an obstacle to the realization of any suggestion in this line. The expense of building up such an establishment and meeting its current requirements seemed to throw the proposition out of consideration, in view of the small number of young men that would be required annually to undertake its course of study prior to filling the vacant places in the Medical Department. And yet the very paucity of the number is, in my opinion, a principal reason why the abilities of each individual joining the corps should be trained sedulously in the lines of his future work. It is on the efficiency of the members of the Medical Department of our small Army that the care of the sick and wounded of the armies of the United States would chiefly devolve in the event of war. Every expenditure, whether of effort or of money, for the improvement of the Medical Corps is a sound investment, which will produce returns

in an improved sanitary condition of our Army in time of peace, but will bear its best fruits, its golden harvest of good work in those times of anxiety and danger when the services of an Army are needed for active field operations.

Being fully convinced of the accuracy of these views, it was with much satisfaction that I recognized the possibility of improvising a school which, although adding nothing to the expenses of the Army Medical Department, would afford all the advantages that could be derived from one costing heavily for its establishment and maintenance. The building provided by Congress for the Library and Museum gave the necessary lecture rooms, and the accumulation of material for bacteriological and chemical study in the Army Medical Museum furnished every thing essential for laboratory work, so that by utilizing these, together with the abilities and experience of those medical officers already on duty in this city who have been appointed members of the faculty, I was enabled, with the approval of the Secretary of War, to inaugurate this important work. The transfer of the Hospital Corps company from Fort D. A. Russell, Wyo., to Washington barracks completed the equipment of the school by providing facilities for instruction in drill, company administration, first aid, and battle-field management.

The report of Col. Alden, president of the faculty, which I submit below, gives the details of the course of study during the session beginning November 1, 1893, and ending February 28, 1894. To this interesting document and its appendices I desire to invite attention, as showing fully the scope of the work of the school and demonstrating its importance and value.

I desire also to thank the members of the faculty for the earnestness with which they entered upon the work of the session and carried out its details, notwithstanding the large amount of additional labor which this imposed upon them. Most of these gentlemen served during the war of the rebellion, holding positions of high responsibility in the Medical Department, and are eminently qualified to hand down to the younger generation the lessons of their earlier experiences as modified by after thought and matured study. Of course without their hearty cooperation the school would have been one only in name. This cooperation, so zealously given, has been a source of gratification to me in manifesting the complete concurrence of these officers in my views, not only as to the importance, but as to the practicability of the undertaking. I unite with Col. Alden also in thanking the gentlemen who kindly enriched the course by valuable lectures on special subjects.

The progress of the school has been watched with interest and approval by the medical profession, and particularly by the medical officers of the National Guard.

In concluding this subject I desire to invite the attention of the Secretary of War to the recommendation given by Col. Alden that the examinations of student officers at the close of the session be taken into consideration in determining relative rank. At present the rank of these officers is already fixed, by the examination for entrance, when the session begins, and their work during its continuance can not alter their relative standing. This takes away an important stimulus to well-doing. I therefore concur in the recommendation of the president of the faculty that the relative rank of those commissioned on the same day be made dependent on the result of the examination for appointment and that of the examination held by the faculty of the school at the end of the session. I recommend that legislation authorizing this change be asked for.

ARMY MEDICAL SCHOOL,
Washington, D. C., March 6, 1894.

To the SURGEON-GENERAL OF THE ARMY:

SIR: I have the honor, as president of the faculty, to submit the following report, required by General Orders 78, Headquarters of the Army, Adjutant-General's Office, September 22, 1893. Copies of orders relating to the school are, for convenience of reference, hereto appended and marked A and B:

The course of instruction commenced on Wednesday, November 1, 1893, at the Army Medical Museum, Washington, as required by the order referred to, and with the faculty therein announced, namely:

Col. Charles H. Alden, assistant surgeon-general, U. S. Army, president of the faculty and lecturer on the duties of medical officers.

Lieut. Col. William H. Forwood, deputy surgeon-general, U. S. Army, professor of military surgery.

Maj. John S. Billings, surgeon, U. S. Army, professor of military hygiene.

Maj. Charles Smart, surgeon, U. S. Army, professor of military medicine and director of the chemical laboratory.

Capt. Walter Reed, assistant surgeon, U. S. Army, professor of clinical and sanitary microscopy and director of the pathological laboratory.

Capt. Julian M. Cabell, assistant surgeon, U. S. Army, assistant to professor of military surgery and instructor in hospital corps drill.

The rooms assigned for the use of the school at the Army Medical Museum proved convenient and suitable. They were used as lecture rooms, chemical and pathological laboratories, school library, and faculty room. The basement was used by the instructor in hospital corps drill for preliminary exercises.

The following courses of instruction have been given:

1. Duties of medical officers in war and peace—17 lectures and practical demonstrations.

2. Military surgery, the care of wounded in time of war, and hospital administration—14 lectures.

3. Military hygiene—15 lectures.

4. Military medicine—8 lectures.

5. Chemistry, general and sanitary—laboratory instruction two hours daily.

6. Pathology and bacteriology—laboratory work three hours daily.

7. Hospital Corps drill and first aid to sick and wounded—practical instruction from one to three hours weekly; instruction in riding one and one-half hours weekly.

Synopses of the lectures and of subjects taken up in the laboratory work, etc., are appended and marked C, D, E, F, G, H, I.

In addition to the lectures given by the faculty officially connected with the school, the following auxiliary courses have been given. They have proved highly interesting and a most valuable addition to the regular instruction of the school. The thanks of the faculty and students are due these gentlemen, who have kindly given their time and labor in aid of our work.

On bacteriology, 9 lectures, by Gen. Sternberg.

On military law, 5 lectures, by Maj. G. B. Davis, Judge-Advocate, U. S. Army.

On comparative anatomy, etc., 3 lectures, by Capt. J. C. Merrill, Medical Department, U. S. Army.

On medical jurisprudence, 4 lectures, by Dr. Robert Fletcher, F. R. C. S., England.

On parasites in man, 2 lectures, with 3 laboratory demonstrations, by Dr. C. W. Stiles, Department of Agriculture.

A very interesting and important lecture was delivered in the course of military surgery "On recent advances in the surgery of the head," by Prof. W. W. Keen, of Jefferson College, Philadelphia.

Synopses of the lectures in the auxiliary courses are appended, marked K, L, M, N, O.

The instruction in equitation was given at Fort Myer, Va., by Lieut. A. W. Perry, Ninth U. S. Cavalry, under the direction of Lieut. Col. G. V. Henry, commanding post, and was valuable and important, as two members of the class were entirely unused to riding. The thanks of the faculty are due Lieut. Perry for the time and attention bestowed on this work.

The daily order of duties is appended and marked P.

Nine medical officers have been in attendance at the school, as follows: The 5 assistant surgeons who were approved by the examining board last October and commissioned October 26, 1893, and 4 assistant surgeons of longer service. Among these, Capt. and Assistant Surg. William Stephenson, U. S. Army, obtained four months' leave from his post, Boise Barracks, Idaho, to attend the school, and 3 others, Capt. and Assistant Surgs. R. W. Johnson, J. L. Phillips, and G. L. Edie, stationed in Washington and vicinity, who took such part of the course, chiefly laboratory work, as their duties permitted.

The courses of instruction as planned have been fully carried out. No lecture hour has been unfilled and no laboratory work omitted. No unauthorized or unexcused absence on the part of any student officer has been reported, and the faculty have been much gratified by the industry, attention to duty, and obedience to the regulations for the school shown by the pupils. No loss or injury to books and apparatus beyond that incidental to their use or that which is usual has occurred.

Faculty meetings have been held on the first Mondays of each month from October to March, inclusive, or as soon after each date as practicable, and at other times as necessity required.

During the last week of the session the 5 newly appointed student officers were examined, in writing chiefly, by the several professors, and their relative proficiency in each branch was found to be as follows:

Duties of medical officers.—1, Howard; 2, Porter; 3, Wilson; 4, Quinton; 5, Bratton.

Military surgery—1, Wilson; 2, Porter; 3, Howard; 4, Quinton; 5, Bratton.

Military hygiene—1, Howard; 2, Porter; 3, Wilson; 4, Quinton; 5, Bratton.

Military medicine—1, Quinton; 2, Wilson; 3, Howard; 4, Porter; 5, Bratton.

Chemistry—1, Wilson; 2, Porter; 3, Howard; 4, Bratton; 5, Quinton.

Pathology—1, Quinton; 2, Wilson; 3, Howard; 4, Porter; 5, Bratton.

Bacteriology—1, Howard; 2, Quinton; 3, Wilson; 4, Porter; 5, Bratton.

Hospital corps drill and first aid—1, Howard and Quinton, being equal; 2, Porter; 3, Bratton; 4, Wilson.

The relative standing of the students, taking all the branches into account and their marking on the basis of 100 maximum, are as follows:

1. Assistant Surgeon D. C. Howard, U. S. A.....	83
2. Assistant Surgeon A. S. Porter, U. S. A.....	82
3. Assistant Surgeon W. H. Wilson, U. S. A.....	81
4. Assistant Surgeon W. W. Quinton, U. S. A.....	74
5. Assistant Surgeon T. S. Bratton, U. S. A.....	62

The closing exercises of the session were held on Wednesday, February 28, at 3 p. m., and consisted of introductory remarks by the president of the faculty, an address by Prof. William Osler, of Johns Hopkins University, Baltimore, Md., and advice to the class by Gen. Schofield, commanding the Army.

In concluding the work of the session, covering the four months ending February 28, the faculty find the plans they had prepared proved generally satisfactory, and while there are some minor changes which their experience has shown to be desirable at another session, it is not deemed necessary to invite attention to them at this time.

One point only, one of some importance, the faculty desire to present for consideration. Since the rank of the student officers is already fixed before they enter the school, and is not affected by their proficiency at the school, there is lacking the stimulus of emulation necessary in all educational institutions. It is very desirable that the future rank of those student officers who have entered the service just before the session of the school should be determined not by the examination for entrance into the corps only, but by the combined results of that examination and their work at the school as determined by the final examination. It is recommended that legislation looking to this change be asked for.

Very respectfully,

C. H. ALDEN,
Assistant Surgeon-General, U. S. A., President of Faculty.

APPENDIX A.

GENERAL ORDERS, }
No. 51. }

HEADQUARTERS OF THE ARMY,
ADJUTANT-GENERAL'S OFFICE,
Washington, June 24, 1893.

By direction of the Secretary of War, upon the recommendation of the Surgeon-General of the Army, an Army medical school will be established in the city of Washington for the purpose of instructing approved candidates for admission to the Medical Corps of the Army in their duties as medical officers.

The course of instruction will be for four months, and will be given annually at the Army Medical Museum, in Washington City, commencing on the 1st day of November.

Four professors will be selected from among the senior medical officers of the Army stationed in or near the city of Washington, and as many associate professors as may be required to give practical laboratory instruction in the methods of sanitary

analyses, microscopical technique, clinical microscopy, bacteriology, urine analysis, etc.

The faculty of the Army Medical School will consist of—

1. A president of the faculty, who shall be responsible for the discipline of the school, and who will deliver a course of lectures upon the duties of medical officers in war and peace (including property responsibility, examination of recruits, certificates of disability, reports, rights and privileges, customs of service, etc.).

2. A professor of military surgery (including the care and transportation of wounded).

3. A professor of military hygiene (including practical instruction in the examination of air, water, food, and clothing, from a sanitary point of view).

4. A professor of clinical and sanitary microscopy (including bacteriology and urinology).

By command of Maj. Gen. Schofield:

R. WILLIAMS,
Adjutant-General.

APPENDIX B.

GENERAL ORDERS, }
No. 78.

HEADQUARTERS OF THE ARMY,
ADJUTANT-GENERAL'S OFFICE,
Washington, September 22, 1893.

By direction of the Secretary of War, upon the recommendation of the Surgeon-General of the Army, the faculty of the Army Medical School, established by General Orders, No. 51, June 24, 1893, from this office, and regulations for the government of the school, are announced as follows:

FACULTY OF THE ARMY MEDICAL SCHOOL.

Col. Charles H. Alden, Assistant Surgeon-General, U. S. Army, president of the faculty, and lecturer on the duties of medical officers.

Lieut. Col. William H. Forwood, Deputy Surgeon-General, U. S. Army, professor of military surgery.

Maj. John S. Billings, surgeon, U. S. Army, professor of military hygiene.

Maj. Charles Smart, surgeon, U. S. Army, professor of military medicine and director of the chemical laboratory.

Capt. Walter Reed, assistant surgeon, U. S. Army, professor of clinical and sanitary microscopy and director of the pathological laboratory.

Capt. Julian M. Cabell, assistant surgeon, U. S. Army, assistant to professor of military surgery and instructor in hospital corps drill.

THE COURSE OF INSTRUCTION.

"The course of instruction will be for four months, and will be given annually at the Army Medical Museum, in Washington City, commencing on the 1st day of November." It will include lectures on and practical instruction in—

1. The duties of medical officers in war and peace.

2. Military surgery, the care of the wounded in time of war, and hospital administration.

3. Military hygiene.

4. Military medicine.

5. Microscopy, sanitary and clinical; pathological histology, bacteriology, and urinology.

6. Hospital corps drill, and first aid to wounded.

By permission of the Surgeon-General medical officers of the Army who desire to avail themselves of the course of instruction, and who are stationed in or near the city of Washington, or who have a leave of absence which enables them to attend the course, may be admitted as pupils under the same regulations as apply to recently "approved candidates for admission to the Medical Corps of the Army."

EXAMINATIONS.

At the termination of the course of instruction the "approved candidates for admission to the Medical Corps of the Army" will be examined by the several professors, and their relative proficiency in each branch will be reported by the president of the faculty to the Secretary of War through the Surgeon-General of the Army.

REGULATIONS.

1. The president of the faculty will be responsible for the discipline of the school.
 2. The junior professor will act as secretary and will be responsible for all property pertaining to the school.
 3. A faculty meeting will be held in the office of the secretary on the first Monday of each month from October to March, inclusive, and whenever called by the president of the faculty or the Surgeon-General of the Army.
 4. Resolutions adopted by the faculty relating to the course of instruction, the purchase of books and instruments, etc., will be submitted to the Surgeon-General of the Army for his approval.
 5. The president of the faculty will submit to the Surgeon-General of the Army, on or before the 1st day of April of each year, a detailed report of the condition of the Army Medical School, including an account of the instruction given and the proficiency of the several pupils as shown by an examination made by each professor at the termination of his course.
 6. The hours of instruction will be from 9 to 12 a. m. and from 1 to 4 p. m., daily, from November 1 to February 28, inclusive, with the exception of Saturdays, Sundays, legal holidays, and the week commencing December 25.
 7. Pupils will be required to be present during the hours designated unless specially excused by the president of the faculty or by orders from the War Department.
 8. When necessarily absent on account of sickness or other emergency, pupils will, as soon as practicable, send a written statement to the secretary of the faculty, explaining the reason for such absence.
 9. The laboratories and library of the Army Medical School will be open for the use of pupils during the hours of instruction designated.
 10. Pupils will be held strictly accountable for all instruments and apparatus issued to them for their personal use during the course of instruction, and for any loss or injury to books or apparatus belonging to the Army Medical School, when such loss or injury is due to carelessness or neglect.
 11. Pupils in the Army Medical School, during the hours of instruction, will wear the undress uniform of the grade to which they belong, except when engaged in laboratory work, when a black cambric laboratory gown may be worn.
- By command of Maj. Gen. Schofield:

R. WILLIAMS,
Adjutant-General.

APPENDIX C.

Duties of medical officers.—Army Medical School, session 1893-'94. By Col. C. H. ALDEN, Assistant Surgeon-General, U. S. Army.

Lecture I.—Course practical, not historical nor comparative; military discipline. Position of the medical officer; command, rank, title. Duties: (1) To admit none but effective men; (2) to keep them effective; (3) to relieve sick and wounded.

Lecture II.—Examination of recruits. How foreign armies are recruited. U. S. recruiting service. Regulations and requirements. Mode of examination. Personal identification system; outline-figure cards.

Lecture III.—Sanitary duties of medical officers; importance; recent origin. Regulations, paragraph 1642. Duties advisory; necessity of studying record of previous inspections. Two classes of defects; of construction permanent, of administration remediable. Plan of inspection.

Lecture IV.—Sanitary duties continued. Barracks and quarters; kitchen; guard-house; post exchange; storehouses; cellar; bakehouse. Points especially requiring attention in each. Drainage and sewerage; disposal of refuse; sinks; disinfectants. Water supply. Clothing. Habits. Cooking and rations. Reports.

Lecture V.—Medical attendance. Regulations. Persons entitled to attendance, to admission to hospital and to medicines. Sick call, how conducted. Records and reports.

Lecture VI.—Private practice; regulations. Insane soldiers; diagnosis of usual forms; how disposed of; necessary papers.

Lecture VII.—Certificates of disability; regulations; method of procedure. Proper cases for discharge; points specially to be regarded. Pension Bureau, its work and relation to Medical Department.

Lecture VIII.—Certificates for sick leaves. Army and Navy General Hospital, Hot Springs; proper cases for and mode of admission; transfers of enlisted men on account of health. Soldiers' Home, Washington, D. C.; proper cases for and mode of admission.

Lecture IX.—Property responsibility. Medical, etc., nature, necessity, returns, requisitions, transfers, disposition of unserviceable property. Standard supply table, Medical Department.

Lecture X.—Hospital administration. Daily routine. Construction and repairs; estimates; inspection of work. Hospital fund; source; proper expenditures therefrom. Returns.

Lecture XI.—Duties of medical officers on scouting parties; on the march; in camp; necessity of readiness for emergencies and field duty; organization of camps and sanitary inspection thereof.

Lecture XII.—Malingering, including concealment, feigning, and artificial production of disabilities. The principal diseases and injuries the subject of malingering and the mode of detection.

Lecture XIII.—The most common errors of refraction as they affect target practice and other military duties. Diagnosis and correction by test lenses.

Lecture XIV.—Duties of medical officers in command of hospital corps detachment. Assignment of duties; discipline; instruction; employment in personal service; returns and reports; official correspondence. Official and social etiquette.

NOTE.—In addition to the lectures proper, practical demonstration and instruction have been given in examination of recruits at rendezvous, Washington, D. C.; in sanitary inspection of posts at Washington Barracks, D. C.; in diagnosis of refraction errors and use of test lenses at Army Medical School. The student officers have been required to prepare enlistment papers, outline cards, certificates of disability, certificates for sick leave, and reports of sanitary inspections.

APPENDIX D.

Military surgery.—Care and transportation of the wounded and hospital administration, Army Medical School, session 1893-'94. By Lieut. Col. W. H. FORWOOD, Deputy Surgeon-General, U. S. Army.

Lecture I.—Introductory: Brief sketch of the history of Army medical aid; in ancient times; in the middle ages. Early methods; flying ambulance of Baron Larrey. Brancardiers; modern development and perfection of the system.

Lecture II.—Weapons of war: Evolution of modern firearms and its influence upon military surgery. The new small-caliber rifle and projectile; the new high-power explosives and smokeless powders; ballistic data; artillery weapons and explosive missiles; side arms. Tables, charts, and specimens.

Lecture III.—Military surgery: General considerations; conditions of civil and military practice contrasted. Preparations for the field; lines of medical aid; sanitation and technique of field surgery.

Lecture IV.—Gunshot wounds; general character from a ballistic standpoint; comparison of wounds made by the old missiles with those of the new small-caliber cupro-nickel steel-cased bullet. Experimental data; range, velocity, penetration, impact, hydraulic pressure, and zones of various effects. Tables, drawings, and charts.

Lecture V.—Gunshot wounds continued: Character and immediate effects of wounds made by the new small-arm rifle on the living subject. Unreliable results of experiments on the cadaver. Experience gained with the new bullet in riots, accidents, and suicide. Experience during the civil war in Chile. Illustrative cases.

Lecture VI.—Gunshot injuries; produced by explosive projectiles or those used by the artillery arm of the service.

Explosive missiles of a less weight than 400 grams prohibited in warfare by international law; effects of new powders in the propulsion and bursting of shells; character and velocity of fragments; nature and gravity of injuries; shock, pain, treatment. Ballistic charts, specimens, and target illustration.

Lecture VII.—Infrequency of primary bleeding from gunshot wounds; blood vessels more frequently wounded by the new bullet; general character, classification, and description of these injuries; primary and secondary hemorrhage; circumscribed and diffuse aneurism; diagnosis, prognosis, treatment. Statistical tables, drawings, and numerous specimens.

Lecture VIII.—Gunshot injuries of the bones: Primary lesions; classification and description, illustrated by numerous specimens from the museum; secondary results; inflammation, suppuration, osteomyelitis; general septicæmia; thrombosis; pyæmia; diagnosis, prognosis. Tables, charts, and specimens.

Lecture IX.—Treatment of gunshot fracture: Conservative; antiseptic occlusion, temporary support, removal from the field, enlargement of wound, removal of foreign bodies, ligation of vessels, permanent dressing, immobilization. Nonconserva-

tive; resection, amputation. Conditions requiring and rules governing these operations. Illustrative cases and statistical tables.

Lecture X.—By Dr. W. W. Keen: On the complications of chronic otitis media and their surgical management, and on the diagnosis and treatment of cerebral and cerebellar tumors in general, with drawings, specimens, and illustrations.

NOTE.—This hour had been set apart in the regular course for gunshot wounds of the head.

Lecture XI.—Gunshot wounds of the throat and chest: Injuries about the larynx; necessity for tracheotomy; operation; superficial wounds of the chest walls; penetrating wounds, character with the new bullet; complications; hemorrhage, emphysema, pneumothorax, fractures of ribs, clavicle and scapula, hernia of the lung, lodgment of foreign bodies, pleurisy, hydrothorax, empyema, pneumonia, pericarditis. Tapping the pleural cavity; resection of ribs. Old cases of chest wounds and empyema presented for illustration.

Lecture XII.—Gunshot wounds of the abdomen: Classification; regional anatomy; gravity of penetrating wounds for different regions; wounds of different organs, differentiation; complications; diagnosis; prognosis; influence of new bullet on; comparative results of the operative and expectant plan of treatment, expectant method; laparotomy, exploratory and formal; conditions, technique, after management. Illustrations, instruments, charts, drawings, and statistics.

Lecture XIII.—Antiseptic technique in military surgery and the care of the wounded: Antiseptic management of gunshot wounds, principles involved, difficulties to be overcome in the field; advantages over old methods; results accomplished; technique of prominent military surgeons. Common errors in operating and how to avoid them. Importance of diagnosis. Specimens and illustrations.

Lecture XIV.—At Soldiers' Home Hospital. Hospital administration: General principles which underlie administrative duties. Personal knowledge of details. Thorough organization. Every man independent in his own sphere; but one immediate superior; the ruinous effects of idle time. Neatness, order, and industry are habits which men will acquire under proper inducement. Inspection of hospital, practical illustrations, blanks, forms, and methods.

APPENDIX E.

Military hygiene.—Army Medical School, session 1893-'94. By Maj. J. S. BILLINGS, surgeon U. S. Army.

Lecture I.—The Army Medical Museum and Library: Origin; development; present condition; comparison with other similar institutions; organization; scope and methods of work; needs and prospects.

Lecture II.—How to use the library. Medical bibliography. Methods of literary research. The literature of military medicine and of hygiene.

Lecture III.—History of hygiene: Jewish; Greek; Roman; Salernum. Leprosy. Black death. Smallpox and vaccination. Typhus and typhoid. Cholera. Southwood Smith. Chadwick. Health of towns commission. Farr. Simon. Local government board. Imperial board of health of Germany. National Board of Health. Massachusetts State board of health. Pasteur and Koch.

Lecture IV.—History of military hygiene: Roman; Fifteenth century. Syphilis. War of independence. Crimean war. Parkes. Barrack commission. War of secession. Franco-German war. Present relations of Army medical officers to sanitation.

Lecture V.—The causes of disease. Classification. Methods of investigation. Statistics, vital, medical, and sanitary, and methods of obtaining and compiling. Death rates.

Lecture VI.—Relations of age, sex, and race to morbidity and mortality. Sickness and death rates in different armies. Life tables.

Lecture VII.—Air: Temperature; pressure; moisture; offensive effluvia; dusts; ventilation; heating.

Lecture VIII.—Water supply: Sources; impurities. Epidemics due to water supply. Examples of typhoid, dysentery, cholera. Storage of water. Distribution, purification, filtration, aeration; ice.

Lecture IX.—Sewage disposal and sewerage. Irrigation. Intermittent filtration. Chemical treatment. Separate systems of sewerage. Size and grade of pipe and brick sewers. Ventilation of sewers. Dry system. Earth closets.

Lecture X.—House drainage and disposal of refuse. Sewer gases. Soil pipes. Traps. Ventilation of pipes and traps. Municipal plumbing regulations. Fixtures. Garbage. Cremation. The disposal of the dead.

Lecture XI.—Habitations. Soils and sites. Camps and posts. Soil drainage. Malaria. Building materials. Light and artificial illumination.

Lecture XII.—Barracks and hospitals: Floor space and cubic space; foundations and cellars; protection from dampness; plans of hospitals; methods of heating and ventilation.

Lecture XIII.—Food and rations: Quantity; quality. Scurvy. Adulterations. Cooking.

Lecture XIV.—Personal hygiene: Exercise; baths; clothing, etc. Hygiene of troops in the field.

Lecture XV.—Sanitary jurisprudence: Municipal; State and National. Law of nuisance. Notification of disease. Quarantine. Relations of Army medical officers to State and National sanitary authorities.

APPENDIX F.

Military medicine.—Army Medical School, session of 1893-'94. By Maj. Charles Smart, surgeon, U. S. Army.

Lecture I.—Nomenclature and classification of diseases. Rates of admission to sick report; of nonefficiency, discharge and death in times of peace, and influence of various factors on these rates, as of rank, corps, age, climate, season, topographical features, various local conditions, and personal equation of medical officers.

Lecture II. Prevalence of particular diseases and classes of disease in times of peace: Injuries; diseases of the digestive system; of the respiratory system; diarrheal, malarial, rheumatic; diseases of the nervous system; of the integuments; venereal, dietetic, and specific febrile diseases; diseases of the eye and ear, and of the circulation.

Lecture III. Diseases affecting scouting parties or expeditionary columns. Discomforts and dangers of the march, chafings, blisters, prickly heat, exhaustion, sun-stroke. Diseases due to changes in the weather; to chill consequent on overheating; to exposure to miasmatic influences; to change of diet, and to defective dietary.

Lecture IV. The diseases affecting new levies in time of war. Smallpox; vaccination and vaccine. Measles; course of disease and treatment in cases of affected individuals and affected regiments. Mumps. Regimental epidemics of typhoid fever.

Lecture V. Diseases prevalent in time of war. Diarrhea and dysentery; anatomical characteristics; causes treatment of epidemics; of individuals.

Lecture VI.—Malarial fevers; intermittents, remittents, adynamic remittents, pernicious cases, and chronic cases; pathological anatomy; causation; prophylaxy and treatment.

Lecture VII.—Typhoid fever; history and prevalence. Mild and abortive cases; so-called typical cases; severe cases; sequelæ. Cases modified by malarial and scorbutic taint. Difference between cases of civil and of camp typhoid fever. Pathological anatomy; etiology; treatment.

Lecture VIII. Typhus fever; history; latest developments in military camps; prevention; treatment. Cerebro-spinal fever; local outbreaks; symptoms; pathology; treatment.

APPENDIX G.

WAR DEPARTMENT, SURGEON-GENERAL'S OFFICE,
Washington, D. C., February 10, 1894.

Col. C. H. ALDEN,

President of the Faculty, Army Medical School:

SIR: I have the honor to report as follows of the course and progress of the class in sanitary chemistry during the first session of the school, 1893-'94. The time allotted to laboratory work was two hours daily, from 1 to 3 p. m., on five days of every week. The first two weeks of the course were devoted to analytical chemistry as taught in our medical colleges in order to freshen the knowledge of the students on this subject and to familiarize them with chemical manipulation and laboratory methods. Special attention at this time was given to the detection of mineral poisons, as arsenic in organic mixtures, wall papers, etc., antimony, mercury, lead, etc., in nostrums, and the methods of separation taught were those that would be most useful for quantitative purposes. Four weeks were spent in quantitative work, during which both gravimetric and volumetric methods were taught with especial reference to the solution of sanitary questions; after which, special subjects were taken up, as the quantitative demonstration of the constituents of normal and abnormal urine; the examination of air and the determination of ventilation by the chemical method; the study of water supplies and the derivation of the organic substances dissolved

in them; the examination of articles of food as to quality and freedom from adulteration, including milk, butter, cheese, bread, flour, baking powders, wines, spices, etc., and a study of some of the more important alkaloids and ptomaines. I regret that the time at command did not permit of perfect work under each of these headings, but I feel confident that each of the student officers has had that amount of laboratory training that will enable him to take up any one of the subjects and prosecute it to advantage.

I append to this communication a synopsis of the course of eight lectures given by me on the subject of military medicine.

Respectfully,

CH. SMART,
Major and Surgeon, U. S. Army.

APPENDIX H.

WASHINGTON, D. C., *February 24, 1894.*

Col. CHARLES H. ALDEN,
*Assistant Surgeon-General, U. S. Army,
President Army Medical School,
Washington, D. C.:*

SIR: I have the honor to submit the following report of the work done in the pathological laboratory of the Army Medical School during the session 1893-'94.

In order to prepare the members of the class for a proper study of bacteria and pathological histology, the first two weeks were occupied with the preparation of the various media required for the culture of bacteria and with learning the methods of hardening and embedding of tissues and section cutting. This having been satisfactorily accomplished, a systematic study of the pathogenic bacteria was undertaken in the bacteriological course, the class having been first made acquainted with the necessary technique by the study of one nonpathogenic organism.

Among the pathogenic organisms studied were the following: *Bacillus anthracis*, typhoid bacillus, *bacillus coli communis*, *bacillus tuberculosis*, *bacillus diphtheriæ*, *staphylococcus pyogenes aureus*, *staphylococcus albus*, *streptococcus pyogenes*, *micrococcus pneumoniae crouposæ*, and the spirillum of Asiatic cholera, together with the other pathogenic spirilla. The last few days of the session were devoted to the study of the tetanus bacillus, though this work remained incomplete. More importance was given to the study of the typhoid-bacillus, *bacillus tuberculosis*, *bacillus* of diphtheria, *diplococcus* of pneumonia, the pyogenic bacteria, and the spirillum of Asiatic cholera than to the other organisms. Nearly four weeks were devoted to a careful and systematic study of the *bacillus* of diphtheria alone.

The inoculation of animals with the *bacillus anthracis*, tubercle bacillus, diphtheria bacillus, the *micrococcus* of pneumonia, and the *staphylococcus aureus* was performed during the session by the members of the class. Autopsies were carefully conducted, and the method of recovering various organisms in pure culture was thoroughly carried out. The tissues were hardened, embedded, and cut by the class, and the sections of all organs stained so as to show the relations of the different organisms to the tissues.

In the course on pathological histology more than two weeks were given to the study of inflammation, as shown in the frog's mesentery, the inflamed ear of the rabbit and cat the heart muscle and kidney of the rabbit inoculated with *staphylococcus aureus*, and in granulation tissue from wounds. Under this head, also, the study of the organization of the blood clot was pursued. It was considered absolutely essential that the members of the class should have a thorough and well grounded knowledge of inflammation prior to the study of other pathological changes. Afterwards the various lesions occurring in the lung, liver, and kidney, were systematically studied. My original intention had been to add to these the study of the lesions of spleen and intestine, but it was seen that the time was too brief to permit of this. These were omitted in order to devote three weeks to the microscopic study of the urine. The last twenty days of the session were occupied with the study of tumors, and a very complete series of benign and malignant growths was examined microscopically. From time to time during the session, in addition to almost daily quizzes, formal examinations were required; thus, a special examination was given to inflammation, to diseases of the lung, of the liver, of the kidneys, and tumors.

During the month of February the class was instructed in the study of animal parasites by Prof. C. W. Stiles, of the Agricultural Department; this instruction was thorough and of much value.

While I do not think that there is any necessity for modification in the course of study pursued in the bacteriological laboratory, I believe that it would enhance the value of the course in pathological histology to devote more time to the microscopical study of the urine and tumors than has been possible during the present session, and to add to these the careful microscopical study of the blood in health and disease. This can be done during the coming session, together with a thorough study of inflammation and the *principal* lesions found in the lung, liver, spleen, kidney, stomach and intestine, omitting from the course the less important changes in these organs. It is also hoped that some attention can be given during the second session to the microscopical study of the lesions of the cord and nerves.

In conclusion, I may remark that although no member of the class has exhibited any special enthusiasm for the work pursued in this laboratory, all have acquitted themselves to my satisfaction.

Very respectfully, your obedient servant,

WALTER REED,
Surgeon, U. S. Army, Professor of Clinical and Sanitary Microscopy.

APPENDIX I.

WASHINGTON BARRACKS, D. C., *February 24, 1894.*

To the PRESIDENT ARMY MEDICAL SCHOOL,

Washington, D. C. (through professor of military surgery):

SIR: I have the honor to submit the following report upon the course of instruction in first-aid treatment and litter drill at the Army Medical School during the past session:

In the beginning of the course of instruction the students were taught the position of the soldier, the salute with the hand, and the marchings.

This was alternated with the setting-up exercises, which were kept up for some time during the session in order to improve their general bearing as military men.

The litter drill was taught by drilling the students themselves, and when they were proficient in this by requiring each of them in turn to drill the others. In this way they were accustomed to give orders. They were required to recite on the drill regulations.

The manual of the sword was also taught them.

As soon as they were proficient they were required to command a squad of enlisted men and to put them through the drill.

Since the middle of December they have been required to attend the official Saturday morning inspection of the Hospital Corps detachment at Washington barracks.

They took, in turn, command of the detachment and also the positions of the junior officers of the inspection.

They were required to accompany the inspecting officer through the hospital when the hospital was inspected.

During the early part of the session, before they had learned to command a squad of men, they were instructed in bandaging and were shown in detail the Hospital Corps equipment.

It was desired especially to make them familiar with the field equipment. The contents of the pouches, panniers, and instrument cases were examined carefully.

They were taught especially the use of the triangular bandage and the methods of rendering first-aid treatment on the battlefield, such as the application of improvised tourniquets and improvised splints.

Instruction in riding was given the students at Fort Myer, Va., by Lieut. A. W. Perry, Ninth Cavalry, U. S. Army. Lieut. Perry deserves much credit for his interest in the class and for the good results he obtained. They were all improved by this instruction, and two of them, who had never ridden before, were taught to ride.

I have the honor to report that, in my opinion, greater advantage would have been received by the students if they had been stationed in a garrison where they might have become familiar with their daily military duties. In that case, they would have but little to learn when they report for regular duty at a post.

As it is, it has been impossible to do more than refer to many important details, which can be learned only by direct contact with the soldier. The students would be under better discipline, and could be taught the importance of being prompt on all occasions. When brought so intimately in contact with the enlisted men they would take more pride in their military deportment. It would be an incentive for them to learn all of their military duties.

For the above reasons I would recommend that the members of the next class be assigned to duty with the Hospital Corps company of instruction which is to be organized at this post. This duty would be of great advantage to them.

If there will not be sufficient room in the hospital for the whole class, two of them at a time might be ordered here for a month's service. This would not interfere with their other studies. It would give an opportunity for short and frequent drills, however, which would make them more proficient.

Very respectfully, your obedient servant,

JULIAN M. CABELL,
Captain and Assistant Surgeon, U. S. Army.

APPENDIX K.

Bacteriology.—Etiology and prevention of infectious diseases. Army Medical School, session 1893-'94. By George M. Sternberg, Surgeon-General, U. S. Army.

Lecture I.—Morphology of bacteria; classification of bacteria; historical résumé.

Lecture II.—General biological characters; reproduction; motions; conditions of growth; modifications of biological characters; products of vital activity.

Lecture III.—Saprophytes: Bacteria in the air; in water; in the soil; in putrifying material; in the alimentary canal, and upon the surface of the body of healthy individuals.

Lecture IV.—Pathogenic micrococci, including pus cocci and micrococcus of pneumonia.

Lecture V.—Pathogenic aerobic bacilli, including bacillus of tuberculosis, of anthrax, of diphtheria, of typhoid fever, of glanders, of influenza.

Lecture VI.—Pathogenic anaerobic bacilli, including bacillus of tetanus and of malignant oedema.

Lecture VII.—Pathogenic spirilla, including spirillum of relapsing fever and of Asiatic cholera.

Lecture VIII.—Influence of physical agents on bacteria. Antiseptics and disinfectants. Practical measures of disinfection.

Lecture IX.—Acquired immunity.

Lecture X.—Etiology and prevention of yellow fever and of cholera.

APPENDIX L.

Military law.—Army Medical School, session of 1893-'94. By Maj. George B. Davis, Judge-Advocate, U. S. Army.

Five lectures: Tuesdays in January, 1894.

SYNOPSIS.

Military discipline.

The origin, sources, and sanctions of military law.

The character and scope of the Articles of War.

Army Regulations, orders, etc.

The constitution, composition, and procedure of military courts.

The rules of evidence.

Civil and military offenses.

The fundamental principles of administration.

APPENDIX M.

Outline of three lectures on comparative anatomy, etc., delivered before the Army Medical School, Washington, D. C., in December, 1893, by Capt. J. C. Merrill, Assistant Surgeon, U. S. Army.

Lecture I.—The definition of the more important words used in comparative anatomy and biology. Outline of the theory of evolution, with explanation of the more important words and phrases used therein. Views of Lamarck, Darwin, and Weismann. Mention of more important reasons for acceptance of the theory of evolution, with illustrations of practical bearings of these subjects on medicine.

Lecture II.—Outline of classification of invertebrates and vertebrates. Special remarks on the tunicata and their larval development. Human osteology, with

especial reference to anomalies which represent what is normal in lower animals, such as the double malar bone and many others. Anatomy of horse, with diagrams illustrating its descent from 3 to 4 toed ancestors. Its anatomy with especial reference to the more important diseases.

Lecture III.—On the poisonous insects, etc., and venomous reptiles of the United States, the more important species being exhibited in alcohol or otherwise. The mechanism of the bite of venomous reptiles.

APPENDIX N.

Medical jurisprudence. Army Medical School, session 1893-'94. By Robert Fletcher, F. R. C. S., England.

Lecture I.—The rise and progress of medical jurisprudence. Dying declarations, how to be taken. Signs of death. The dead body. Putrefaction. Recognition.

Lecture II.—Asphyxia, including drowning, hanging, strangulation, and suffocation.

Lecture III.—Cold and heat. Lightning stroke. Wounds and injuries of head, chest, and localities generally. Gunshot wounds.

Lecture IV.—Personal identity. The living, the dead body, mutilated parts, bones and fragments of bones. Survivorship. Malpractice. Railroad accidents and claims.

APPENDIX O.

Parasites in man. By Dr. C. W. Stiles, Department of Agriculture. Two lectures and three laboratory demonstrations.

SYNOPSIS.

Lectures.—Parasitism. Mutualism. Commensalism. True parasitism. Pseudo-parasitism and spurious parasitism.

Laboratory demonstrations.—*Trichina spiralis* and trichinosis. Examination of meat. Diagnosis from *sarcocystis miescheri*. Examination of stools for adult parasites. Diagnosis of intestinal parasites by microscopic examinations of feces for forms of the eggs.

APPENDIX P.

Army Medical School, Washington, D. C.

Session of 1893-'94.

ORDER OF DUTIES.

DAILY, EXCEPT SATURDAYS, SUNDAYS, AND HOLIDAYS.

9 a. m. to 12 m.—Instruction in pathological laboratory.

1 p. m. to 2:50 p. m.—Instruction in chemical laboratory.

3 p. m. to 4 p. m.—Lectures.

SATURDAYS.

9 a. m. to 10 a. m. and as specially ordered, at Hospital Corps school of instruction, Washington barracks.—Practical instruction in litter and ambulance drill and first aid.

11 a. m. to 12:30 p. m., Fort Myer, Va.—Practical instruction in equitation.

The lectures will be delivered as follows:

Duties of Medical Officers.—Wednesdays, except November 22, 1893.

Military Surgery, etc.—Thursdays throughout the course.

Military Hygiene.—Fridays, except February 23, 1894.

Military Medicine.—Tuesdays, November 7 and 14, Wednesday, November 22, 1893, and Mondays, January 8 and 29, February 5, 12, and 19, 1894.

AUXILIARY COURSES.

Bacteriology.—Gen. Sternberg. Mondays, to include January 22, 1894.

Military Law.—Maj. G. B. Davis, Judge Advocate, U. S. A. Tuesdays in January, 1894.

Comparative Anatomy, etc.—Capt. J. C. Merrill, Medical Department, U. S. A. Tuesdays in December, 1893.

Medical Jurisprudence.—Dr. Robert Fletcher, F. R. C. S., England. Tuesdays in February, 1894 (except the 27th); also, Friday, February 23.

Parasites in Man.—Dr. C. W. Stiles, Department of Agriculture. Tuesdays, November 21 and 28, 1893.

INSPECTIONS BY MEDICAL DIRECTORS.

I desire here to place on record my appreciation of the value to the Medical Department and to the service generally of the inspections made by medical directors under the requirements of Army Regulation 1662. These visits to the military posts in their departments are of great importance to medical directors, for without the thorough knowledge acquired by personal observation and inquiry it would be impossible for these officers to discharge their duties intelligently. It is an everyday occurrence for communications relating to suggested changes and improvements to be referred to them for their views and action. Necessarily the value of their opinion in such cases depends on the accuracy of their knowledge of the sanitary conditions involved. In like manner the satisfactory performance of many of their duties depends on their intimate knowledge of the character and professional qualifications of their subordinates, which can be obtained only by personal contact. The Surgeon-General, in making allotments for the construction and repair of hospitals and hospital stewards' quarters and in making assignments of medical officers and others, has frequently to be guided by the views of medical directors who owe their more intimate knowledge of the facts in any case to the opportunities afforded by these inspections. There are, moreover, many articles of drugs, surgical instruments and appliances, microscopes and microscopical accessories, and chemical and bacteriological apparatus which require expert knowledge for their inspection. It is impossible for an officer who is not a medical man to act appropriately on such articles. It is impossible, also, for a nonmedical inspector to determine the professional qualifications of medical officers, or to appreciate the methods of treatment carried out in the hospitals, or the progress of the hospital corps members in pharmaceutical and other special work. Nor can the nonmedical inspector take the place of the medical director in advising the younger officers of the medical corps in difficult medical or surgical cases, or on mooted points of local sanitation which often involve large expenditures of money.

Col. Joseph R. Smith, medical director, Department of the East, remarks as follows on this subject:

The visits prescribed by Army Regulation 1662 are necessary to inform the medical director and department headquarters and the Surgeon-General and War Department of the sanitary condition and needs of the posts, and on such subjects of administration of the Medical Department as, owing to their technical nature, are not thoroughly understood by other than medical men, as well as to give the medical director personal knowledge of his subordinates and enable him to give them instruction on certain subjects when needed.

The necessity of such information is generally acknowledged. In many armies of civilized countries there are officers of rank and experience called medical inspectors. Their necessity was apparent in the U. S. Army during the war of the rebellion. They would now be necessary were it not that, owing to the peculiar service of the U. S. Army in peace, the work formerly performed by medical inspectors can be and is well performed by medical directors.

Careful study of the subject must lead to the conclusion that the visits of the medical director, prescribed by Army Regulation 1662, are among the most important and necessary features of administration of the Medical Department of the Army.

HOSPITAL CORPS.

The work of the Hospital Corps continues to demonstrate the wisdom of establishing this branch of the service, not only by the better care of the sick and wounded at our military posts, but by its efficiency in field work during the recent riots. The number of Hospital Corps members in service June 30, 1893, was: Hospital stewards, 122; acting hospital stewards, 79; privates, 589. The authorized quota consists of 146 hospital stewards, 95 acting hospital stewards, and 598 privates; but from motives of economy a continuous effort was made to have the current work of the corps performed with the smallest number consistent with satisfactory results. The appropriation for the year for the support of the corps was \$215,000. By carefully watching the numbers from month to month, so that the cost for each period should not exceed its proportion of the appropriation, the expense of the corps has been kept within this limit.

The following changes in the personnel took place during the year: Of 31 privates examined for the position of acting hospital steward 16 were found qualified and detailed, and 15 failed. Thirty-nine acting hospital stewards applied for examination for the position of hospital steward; of these 1 withdrew, 9 failed, and 29 were found qualified. Nine of the successful candidates made over 90 per cent, and 1 as high as 99.2 per cent. Owing to the smaller number of vacancies only 9 of the approved candidates have so far been promoted to the grade of hospital steward. The corps lost during the year—

	Hospital stewards.	Acting hospital stewards.	Privates.
By expiration of service	26	14	93
Discharge for disability	1	.....	10
Discharge by order	5	3	67
Discharge by sentence of general courts-martial	2	.....	18
Transferred to line of Army .....	.....	.....	28
Retired	2	.....	2
Died	3	.....	3
Deserted .....	.....	1	12
Total	39	18	233

Its gain was—

By enlistments and reenlistments	120
Transferred from the line	144
Rejoined from desertion	7

These changes left the corps June 30, 1894, with 117 hospital stewards, 75 acting hospital stewards, and 585 privates.

Of the enlistments and reenlistments in the corps there have been—

Civilians, first enlistment	31
Civilians with previous service	20
Reenlistments from the line into the Hospital Corps	9
Reenlistments within the corps the day following discharge or within 30 days following	60

Of the number above noted as discharged by order, 34 were discharged under the provisions of General Orders, No. 80 of 1890. By the operations of this act, and of that forbidding the reenlistment of

men after ten years' service, the corps lost many valuable men and an unusual number of assignments was made necessary to fill their places. Efforts have been made to recruit the corps as far as possible from civil life to save the transfer of men already enlisted into the line, and, as will be seen from the above numerical statement, a considerable number of the men were so obtained. At posts situated at great distances from the schools of instruction it is impossible, with due regard to economy of transportation, to supply men from the schools; vacancies at these posts have therefore been filled chiefly by transfers from the line.

The schools of instruction established at Fort Riley, Fort D. A. Russell, and Washington barracks have continued their highly valuable work, and although it has not been practicable, on account of necessity for economy in transportation, to secure the instruction of the corps at large at these schools to the extent that is desirable, they have been of great and essential service, especially in the case of those enlisted from civil life.

The training given at these schools covers all the duties which the Hospital Corps noncommissioned officer or private is liable to be called on to perform, viz, nursing and first aid to the sick and wounded; pharmacy and dispensary work; clerical work in the preparation of papers and reports; cooking, mess management, and such field work as pitching of tents and cooking and caring for the sick in the field. Instruction in riding and the care of animals to such of the men as had no previous training of this kind has not been practicable, as no animals could be obtained for this purpose. Seventy-four entered the schools during the year and 69 were transferred after a course of instruction lasting about four months. As stated in my last annual report, it is intended that the school shall be withdrawn entirely from Fort D. A. Russell as soon as accommodations are ready at Washington barracks, the transfer to this latter point having been commenced last fall. With two schools of instruction, at Fort Riley in the West and Washington barracks in the East, it is expected that the maximum benefit from their work will be secured. It should be noted that the schools are not only of great value as a means for the instruction and improvement of the men in their legitimate work as nurses, cooks, stewards, etc., but that by the gathering together of men under instructions at these points depots are formed from which assistance can be sent in case of emergency to any part of the country. During the present year the schools at Forts Riley and D. A. Russell furnished men for service with the detachments sent out to protect the railroads against the strikers.

It is believed that the character of the personnel of the Hospital Corps is undergoing improvement. Care is taken when a member applies for reenlistment to examine into his record, of which a full history is kept, and in no case, unless it is shown by previous service that he is sober, reliable and efficient, is his reenlistment authorized.

The following remarks concerning the corps show the impression which it has made on inspecting officers:

Col. Hughes, inspector-general, Department of the East, in a report of an inspection of Fort Hamilton, N. Y., under date of September 22, 1893, says: "Some of the men now in this detachment have gone through one of the schools of instruction. The advantages of these schools will be very apparent to any one who will take the trouble to inspect the individual members of this detachment."

Col. Page, medical director, Department of the East, in inspection report September 1, 1893, states: "There seems to be a growing interest in the management of the Hospital Corps. Medical officers take great care in drilling and instructing the detachments, and their work is bearing fruit."

Lieut. Col. Bache, medical director, Department of the Platte, under date of August 2, 1893, writes: "I am enabled by the inspection of detachments in this department to compare the efficiency and training of the men instructed at this school with the products of ordinary transfer at the posts, and the superiority of such men is constantly demonstrated. This favorable estimate is supported by the reports of most of the medical officers."

Some points of a minor character connected with the uniform and equipment of the corps are under consideration. These will probably be settled during the course of the present year if the observation and experience of our medical officers suffice to determine the changes that are desirable and proper for permanent adoption with a view to promote efficiency in active service.

The instruction of company bearers in stretcher drill and first aid has been continued during the year at all the posts, but, as has before been pointed out, under great difficulties owing to the impossibility of securing the regular attendance of the bearers and their frequent change of personnel. It has been suggested, and the suggestion has been acted on at some posts experimentally, to instruct each organization at the post in turn in these duties, under the idea that it would be desirable that as many men of each company should be acquainted with the stretcher drill and the principles of first aid as possible, so that in case of action or emergency there would be a certainty of having qualified bearers on hand.

RECRUITING.

The number of applicants for enlistment and reenlistment during the year was 20,332: White, 19,036; colored, 1,191; Indian, 105. Of these, 8,813 or 43.34 per cent were accepted, including 43.12 per cent of the whites, 44 per cent of the colored, and 77.14 of the Indians. Of the number examined 52.04 per cent of the whites, 53.65 of the colored, and 21.90 of the Indians were rejected; and 4.84 whites, 2.35 colored, and 0.95 Indian declined enlistment. In addition to these, 179 Indians were examined for enlistment as scouts, all of whom were accepted.

Causes of rejection.—Of the 20,332 men examined 10,568 were rejected on primary examination and 278 on secondary examination at the recruiting depots, a total of 10,846 or 53.34 per cent. A much smaller number than usual was rejected on account of general unfitness and unclassified causes—4.34 per cent of the total number examined, as compared with 11 per cent last year. Defective vision was as usual the most prolific cause of rejection, being present in 8 per cent of the whole number examined. Rejection was due to fraudulent enlistment, bad or doubtful character, or to unsatisfactory references in 4.80 per cent; to imperfect physique in 4.32; to deficient weight or height in 6.53; to minority in 2.62; to imperfect knowledge of the English language in 1.58, and to illiteracy in only 0.21 per cent.

Physique of accepted recruits and reenlisted men.—Age: Of 8,813 accepted—white 8,208, colored 524, Indian 81—486 were under 20 years of age, average 18.4 years; 4,309 were 20 to 24 years, average 21.9; 2,295, 25 to 29 years, average 26.7; 820, 30 to 34 years, average

31.8; 370, 35 to 39 years, average 36.9; 467, 40 to 49 years, average 43.7; and 66 over 50 years, average 52.5—the average age of the whole number being 25.9 years.

The average height of these men was 67.46 inches, the Indian taller than the white man and the latter taller than the negro; their heights being, respectively, 68.35, 67.47, and 67.14 inches.

The average weight was 144.42 pounds, the Indian the heaviest; the respective weights, Indian, negro, and white, being 151.98, 148.25, and 144.10.

The chest measurement also was largest in the Indian, expanding from 34.64 inches at expiration to 37.58 at inspiration, as compared with 34.31 and 37.16 as the average measurements of the whites, and 34.09 and 36.68 of the colored man. The average measurements of all the races were 34.30 and 37.13 inches. Capacity and expansibility of the chest increased with age from 33.25, the expiratory measurement, and 36.04, the inspiratory measurement of those under 20 years, to 35.33 and 38.05 of those over 50 years.

Of every hundred of these men 66.6 were native Americans (white, 59.75; colored, 5.93; Indian, 0.91), 9.54 were Irish, 9.21 German, 3.83 English, 2.14 Canadians, 1.58 Swedish, and 1.28 Danish.

IDENTIFICATION OF DESERTERS, ETC.

Since the outline figure card system has been in efficient operation, that is since July, 1890, 366 men have been identified, 137 as deserters, 121 as military convicts, and 108 as other cases of fraudulent enlistment. Fewer identifications were made during the past year than in any one of the three preceding years—76 in 1891, 97 in 1892, 133 in 1893, and only 60 during the past fiscal year. This diminution in the number of identifications is not to be attributed to any defect of the system. It is the natural consequence of its successful operation. When deserters, and others of the kind sought to be identified by the outline figure card system, become aware that detection is sure to follow their examination for enlistment they will naturally avoid the recruiting office. The object of the system is to keep the ranks free from these undesirable men, and it is accomplished by excluding them even better than by weeding them out.

In addition to the 366 cases mentioned there have been 142 identifications in the case of men not now in the service—deserters, 97; convicts, 18; others, 27.

The office has now accumulated the cards of a little over 9,000 men whom it is desirable to keep out of the ranks; and should any one of these men present himself for enlistment under an assumed name his identification would follow as soon as his outline figure card was received.

MEDICAL DEPARTMENT OF THE NATIONAL GUARD.

The only report on this subject received during the year was from Capt. R. J. Gibson, on duty with the troops who took part in the encampment of the Texas Volunteer Guard at Austin, Tex., in July, 1893. The march of the troops from Fort Sam Houston to the encampment was accomplished without sickness or accident, notwithstanding the excessive heat. During the encampment every courtesy was shown to the medical officers on duty with the volunteer guard. They were repeatedly invited to the camp of the regular troops to witness ambulance

and litter drill, and the equipment of the field hospital was submitted for their inspection. At the request of Col. Ford, medical director of the guard, Capt. Gibson visited the camp of the guard with a hospital steward and ambulance and personally drilled some of the company bearers. There were present 1 medical director, 1 brigade surgeon, and 4 regimental assistant surgeons, all men of soldierly bearing and high professional qualifications. They were not supplied with medicines, instruments, or surgical appliances by the State; such articles of this kind as they had with them were their own personal property. Their camp hospital consisted of 4 hospital tents, 1 used as a dispensary, the others fitted up for patients. There was no ambulance with any of the organizations and no hospital corps; but certain enlisted men had been trained in litter-bearer duties, and these, if provided with ambulances, litters, and supplies, would have been able to have rendered efficient service in the field.

Although there has been but little official communication between the Medical Department of the Army and that of the National Guard the fourth annual meeting of the Association of Military Surgeons of the United States, held in Washington in May last, afforded an opportunity for personal contact and interchange of views between the members of the various organizations. This association was organized by the surgeons of the National Guard for cooperation in making the medical department of the military forces of each State thoroughly fitted to take its place in the field, either by itself or as a component of a national medical department. This office looked favorably upon the organization of the association as a medium by which it might keep *en rapport* with the medical corps of the State forces, and sent delegates to its meetings to ascertain the views and practice of these medical officers. The meeting in Washington was attended by the Army medical officers on duty in and near the city, and by several from neighboring posts in the Department of the East. Several others, who were prevented from being present by their duties or the distance of their stations, sent valuable papers on professional subjects to be read by proxy. Cols. Irwin and Alden, Lieut. Col. Forwood, Majs. Smart, Havard, and Hoff, and Capts. La Garde, Powell, Pilcher, Ewing, and Cabell took an active part in the proceedings. The Navy was represented actively by Medical Directors Gihon and Clebourne, and Surgs. Wise and Beyer. An interesting and valuable address was made by Prof. Senn, of Chicago, the president of the association, on "abdominal surgery on the battlefield," this subject being one in which his experience and surgical acumen have benefited suffering humanity and reflected credit on the profession of surgery in this country.

Among the many State officers who contributed materially to the success of the meeting may be mentioned Surg. Gen. Read and Surg. Egle, of Pennsylvania; Surg. Gen. Burrell, Medical Director Forster, and Assistant Surgs. Standish and Galloupe, Massachusetts; Surg. Gen. Cook, of New Hampshire; ex-Surg. Gen. Woodward, of Michigan; Medical Director Chaucellor, of Missouri; Medical Director Almy, of Connecticut, and Assistant Surg. Clark, of Iowa. The association was pleased to elect me its presiding officer for the coming year, an honor which I regarded and accepted as a recognition of my official position, and which gratified me as demonstrating the closeness and strength of the bond uniting the Medical Department of the Army to that of the military forces of the States. The next meeting of the association will be held in Buffalo, N. Y.

HEALTH OF THE ARMY.

The health of the Army has differed but little during the year from that shown by the best of our Army medical records. The admission rate per thousand of strength present was 1,289.04, practically the same as the rate of the previous year, 1,270.42, a great improvement on the average annual rate of the previous decade, 1,424.20, and only slightly greater than the lowest rate, 1,247 (in 1887), ever furnished by our troops. The number of sick daily was 40.15 per thousand of strength, as compared with 39.60 during the preceding year. The number of days lost by sickness was equal to 14.7 for each member of the strength of the Army, as compared with 14.5 days during the preceding year and with 15.8 days for the average annual number of the previous decade. The rate of discharge for disability reached its lowest point this year, only 14.93 per thousand of strength, as contrasted with 18.35 during the preceding year and with 28.82 during the years of the previous decade. The lowest rate recorded prior to that of the present year was 17.23 in 1891. This satisfactory result is certainly due to the greater care taken in the selection of men for enlistment, for were it owing to the retention of disabled men the noneffective rate would give evidence of the fact. The deaths from all causes equalled a rate of 6.91 per thousand living, the lowest rate heretofore recorded having been 6.33 in 1889. Last year the rate was 6.44, and during the years of the previous decade 8.51. Excluding accidents and injuries the death rate was 4.01, which is practically the same as that of the year 1889, the year of least mortality, when the death rate from disease was 3.95 per thousand living.

The following tabulation shows the rates of the past year as contrasted with those of the previous year and with the average annual rate of the decade immediately preceding:

Army.	Mean strength.	Ratio per thousand mean strength.						Sick time for each soldier.
		Admis- sions.	Deaths.			Dis- charges.	Con- stantly noneffect- ive.	
			Disease.	Injury.	Total.			
United States, 1893.....	23, 287	1, 289. 04	4. 01	2. 89	6. 91	14. 93	40. 15	Days. 14. 7
United States, 1892.....	24, 203	1, 270. 42	4. 36	2. 08	6. 44	18. 35	39. 60	14. 5
United States, 1882-'91.....	23, 950	1, 424. 20	5. 65	2. 86	8. 51	28. 82	43. 16	15. 8

Injuries, as usual, take first place in the causation of the admissions to sick report, having caused 243.29 of the 1,289.04 admissions per thousand of strength during the year. Specific febrile diseases take second place, with a rate of 171.19, mostly due to influenza; diseases of the respiratory and the digestive system take third and fourth place, respectively, with 141.06 and 113.77 cases per thousand men; diarrheal diseases stand fifth, with a rate of 98.47, and malarial affections sixth, with 93.64.

Injuries caused also 7.92 of the 40.15 constantly disabled in every thousand men. Venereal diseases, as in former years, take second place as a disabling cause, having kept 5.41 men unfit for duty out of every thousand. Third place was taken by specific febrile diseases, 4.50, the chief factors being influenza and typhoid fever from the number and duration, respectively, of their cases. Then follow in order of prominence diseases of the respiratory system, 3.45; malarial diseases,

2.45; diseases of the digestive system, 2.09, and of the locomotor system, 2.02, the last mostly cases of muscular rheumatism.

The absolute number of discharges for disability was 413. Seventy-one of these were occasioned by accidents and injuries, including 21 cases of rupture; 53 by venereal diseases; 48 by insanity, epilepsy, and other affections of the nervous system; 44 by pulmonary consumption; 36 by diseases of the locomotor system; 32 by heart disease, and 24 by affections of the eyes.

The absolute number of deaths was 191. Eighty of these were deaths from violence or accident, including 25 from gunshot wounds and 21 by drowning. Pneumonia caused 18; pulmonary consumption, 17; typhoid fever, 16; kidney disease, 11; alcoholism, 10; heart disease, 6, and erysipelas 5.

The mean strength of the Army during the year was, according to the medical reports, 25,287 men: Whites, 22,429; negroes, 2,143, and Indians, 715. Both the admission rate and the rate of nonefficiency of the white troops were larger than the corresponding rates of other races, but the death rate of the negroes and the death and discharge rates of the Indians were considerably higher than those of the white troops.

The Indians appear to have suffered more than the whites from mumps, erysipelas, venereal diseases, conjunctivitis and other diseases of the eye, consumption, pneumonia and glandular swellings; less than the whites from muscular rheumatism and hernia. The negroes suffered more than the whites from mumps, erysipelas, muscular rheumatism, and frostbite; less than the whites from venereal diseases. The whites suffered more than the other races from malarial and diarrheal diseases and alcoholism. The high death rate of the Indian was due to consumption and pneumonia, and his high rate of discharge to the effects of these diseases and of syphilis.

HEALTH OF THE MILITARY DEPARTMENTS.

The admission rates of the military departments varied from 1,578.77 per thousand of strength in the Department of Texas to 788.71 in the Department of the Columbia. The departmental rate of nonefficiency had its maximum and minimum, 53.97 and 24.68, in these same departments. In the departments of the East and of the Missouri both of these rates were higher than the average of the Army, while in all the other departments they were lower than the average.

The death rate also had its maximum and minimum in Texas and the Columbia, ranging from 11.54 to 5.79 per thousand living. It was lower than the average of the Army only in the departments of the Columbia, Colorado, and Missouri.

The rate of discharge for disability ranged from 20.14 per thousand of strength in the Department of California, to 8.63 in the Department of the Platte. It was below the Army average only in the departments of the Platte, the East, and the Columbia.

Last year, as during that which preceded it, the Department of Texas had the worst and the Department of the Columbia the best medical record.

DEPARTMENT OF THE EAST.

This department, with a mean strength of 6,944 men, had an admission rate of 1,521.57, and 43.34 men constantly sick per thousand of strength, with a death rate and discharge rate, respectively, of 7.34 and 13.39. The high admission rate was not due to an unusual prevalence of any particular diseases, but to an equable increase of all diseases.

Of the posts in this department the two recruiting depots, Columbus barracks, Ohio, and Davids Island, N. Y., had the largest admission rates, 2,578.27 and 2,283.76, respectively. The former had also the largest rate of constant sickness, 92.16 per thousand of strength, the nonefficiency of the latter post having been relatively small, 48.44. The large admission rate of Columbus barracks was due to vaccinations, venereal diseases, and an unusual prevalence of catarrhs, pharyngitis, measles, and mumps. More than one-fourth of the nonefficiency was caused by venereal diseases. The redeeming feature in the sick report of this post is its low admission rate for alcoholism, 6.39, as compared with 33.97, the Army average. At Davids Island the increased admission rate was due to the vaccination of recruits and an excessive prevalence of catarrhs and bronchitis. The most objectionable feature of this depot is found in the defective construction of the men's quarters, which are roomy, open and unceiled, very comfortable in summer, but cold, drafty and uncomfortable in winter. Venereal diseases among these recruits did not exceed the average, and alcoholism was less common than in the Army as a whole. The excess of nonefficiency was due to the vaccinations.

Mount Vernon barracks, Ala., Fort Myer, Va., and Washington barracks, D. C., had admission rates of over 2000, with nonefficiency represented respectively by 48.70, 62.57, and 54.27. The large rate of the first-mentioned post was due to an increased prevalence of most of the recorded diseases. At Fort Myer injuries and malarial diseases, with a somewhat increased prevalence of venereal affections, constituted the excess of the admissions; malarial diseases caused a constant sick rate of 10.09, as compared with 2.45 in the Army generally, and injuries 18.88, as compared with 7.92. At Washington barracks the excess was occasioned by malarial and venereal diseases, the admission rate of the former being 853.66, as compared with 93.64 in the Army, and that of the latter 167.25, as compared with 73.08. At this post 13.50 men per thousand of strength were constantly sick with venereal diseases, and the autumnal epidemic of malarial fevers was such as to equal 11.80 men per thousand nonefficient throughout the year. Fort Barrancas, Fla., and Fort Porter, N. Y., had admission rates in excess of 1,800, and Fort Hamilton, N. Y., and St. Francis barracks, Fla., in excess of 1,700; but as many of the cases were of short duration the rates of nonefficiency were not as high as might have been expected from the number of the admissions. The excess of admissions at Fort Porter was due to catarrhs and alcoholism; at Fort Hamilton, to malarial and diarrheal diseases and catarrhs; at St. Francis barracks, to diarrheal and venereal diseases, rheumatism, and diseases of the integuments, mostly boils and abscesses; and at Fort Barrancas to malarial, diarrheal, and venereal diseases, alcoholism, and injuries. At the last-mentioned post catarrhs were infrequent.

Four of the posts in this department presented excellent records: Madison barracks, N. Y., with an admission rate of 600 per thousand of strength and a non-efficient rate of 21.45, as compared with 1,289.04 and 40.15 in the Army as a whole; Fort Niagara, N. Y., with 666.67 and 17.38; Fort Thomas, Ky., with 907.61 and 26.10, and Fort Columbus, N. Y., with 1,088.08 and 38.89.

Most of the posts that have not been mentioned specially had higher rates than the Army average. Fort Monroe, Va., for instance, had 1,379.01 and 46.42, and Fort McPherson, Ga., 1,391.41 and 54.17. West Point, N. Y., had an admission rate of 1,396.87, but the nonefficiency was only 26.00, the excess of admissions were mainly catarrhs, while

the small nonefficiency is attributable to the freedom of the garrison from venereal diseases. At Willets Point a similar excess of admissions is referable to alcoholism; but the medical record of this post has improved considerably during the past year.

DEPARTMENT OF THE MISSOURI.

This department, with a strength of 4,169 men, had an admission rate of 1,376.59, a nonefficient rate of 41.17, a death rate of 6.48, and discharge rate of 16.07. These slightly increased rates were occasioned by malarial and diarrheal diseases. The cavalry-recruiting depot at Jefferson barracks, Mo., had the highest admission rate, 2,004.13, but its noneffective rate, 50.59, was less than that of Fort Reno, Okla., 59.28, with an admission rate of 1,734.04. Malarial fever, mumps, vaccination, diarrhea, and contusions and sprains caused the high rate among the recruits, who were relatively free from the effects of dissipation. At Fort Reno the excess of admissions was due to malarial and diarrheal diseases and injuries, with typhoid fever contributing materially to nonefficiency. At Fort Supply the rates were 1,497.74 and 44.75, due chiefly to diarrhea and bronchitis. Fort Leavenworth, Kans., and Fort Sill, Okla., had rates above the average; those at the one occasioned by mumps and diarrhea, at the other by venereal diseases. At Fort Riley, Kans., and Fort Sheridan, Ill., the number constantly sick was relatively less than in the Army as a whole, and at Forts Wayne and Brady, Mich., the admission rate also was low.

DEPARTMENT OF DAKOTA.

In this department, with a strength of 3,505 men, the rates were as follows: Admission, 1,092.15; noneffective, 35.09; death, 7.13; discharge, 16.83. The relative infrequency of malarial and diarrheal diseases, venereal affections, and alcoholism was the cause of these low rates of admission and nonefficiency.

Forts Keogh, Mont., Yates, N. Dak., and Meade, S. Dak., are the only posts in this department where the rates exceeded the average of the Army, their admission and noneffective rates being for the first 1,633.99 and 52.11; for the second, 1,520.60 and 44.02, and for the third, 1,500 and 51.76. At Fort Keogh the infrequency of malarial fevers was offset and the high admission rate caused by the prevalence of influenza and diarrhea. At Fort Yates the infrequency of venereal diseases and malarial fevers was more than offset by a relative increase of injuries, influenza, colic, and constipation. At Fort Meade only malarial diseases were infrequent, while influenza, diarrhea, and injuries summed up the excess of disability.

Fort Custer, Mont., had the unusually low rates of 333.33 and 13.17; and but for some cases of influenza the rates of Fort Yellowstone, Wyo., would have been equally low—as it was they were 520.00 and 20.77. Fort Sully, S. Dak., had 725.15 and 17.67; Fort Missoula, Mont., 773.87 and 18.16; Fort Buford, N. Dak., 968.42 and 34.27; Fort Snelling, Minn., 979.17 and 39.41, and Fort Assinniboine, Mont., 1,182.88 and 31.29.

DEPARTMENT OF THE PLATTE.

In this department, with a strength of 2,665 men, the rates were: Admission, 1,178.24; noneffective, 34.26; death, 8.26; discharge, 8.63. Malarial fevers and diarrheal diseases were relatively infrequent, while

rheumatism, catarrhs, and alcoholism were somewhat more common than in the Army as a whole.

The post having the highest rates was Fort McKinney, Wyo.; admission, 1,601.45; noneffective, 54.36, caused by the excessive prevalence of rheumatism, catarrh, boils and abscesses, injuries, and alcoholism, and the duration of venereal cases; other diseases prevailed at the Army rates excepting malarial affections, of which there were practically none. Not one of the other posts in the department had the noneffective rate higher than the average, although Fort Niobrara, Nebr., and Fort Sidney, Wyo., had admission rates somewhat in excess, the former 1,367.61, the latter 1361.81. Fort Omaha, Nebr., had the best record; admission, 750.53; noneffective, 28.01; and Fort D. A. Russell followed, with 1,091.10 and 34.84. In the rates of the former post are included those chronic cases sent from other posts in the department for observation by the medical director prior to discharge.

DEPARTMENT OF TEXAS.

In this department, with a strength of 1,733 men, the rates were: Admission, 1,578.77; noneffective, 53.97; death, 11.54; discharge, 16.16. The excess of disability was due to all causes except injury, but notably to malarial and diarrheal diseases and epidemics of influenza and dengue.

With the exception of the admission rate of Fort McIntosh, the rates of the posts in this department exceeded the average of the Army. Fort Bliss had the highest admission rate, 2,200, mainly due to influenza and malarial fevers, and these were the cause of nearly one-half of the nonefficiency of 46.89. Fort Clark followed, with an admission rate of 2,165.60, and the highest rate of nonefficiency, 79.79, the excess in both rates resulting from malarial and diarrheal diseases and affections of the digestive system. The rates at Fort Ringgold were nearly as high as at Fort Clark, but an epidemic of dengue, 117 cases in a strength of 149 men, was the cause of the unusual sickness. Fort Brown was similarly affected, 69 cases in a garrison of 83 men. The rates at Fort Sam Houston were raised a little above the average by influenza. Fort McIntosh had the smallest admission rate, 1,218.18, but its nonefficiency was high, 65.62, on account of a number of cases of typhoid fever.

DEPARTMENT OF THE COLORADO.

Average strength, 3,458 men; admission rate, 1,190.57; noneffective, 36.29; death, 6.36; discharge, 15.33. The sickness in this department was of the same general character as that of the Army, but with the prevalence of all diseases slightly diminished.

Of the posts Fort Wingate, N. Mex., Fort Grant and Whipple barracks, Ariz., had rates above the average. Admission, 1,564.10, 1,532.65, and 1,336.21, respectively, and noneffective 48.68, 50.65, and 46.66. At the first the excess was caused by rheumatism, bronchitis, and injury; at the second by malarial fevers and injuries, and at the third by malarial fevers and bronchitis. At Fort Huachuca, Ariz., and Fort Marcy, N. Mex., the rates did not differ much from those of the Army; at the other posts they were smaller. Fort Stanton, N. Mex., gave the best record, 757.01 and 18.56; Fort Bayard, N. Mex., followed with 851.19 and 30.89, and San Carlos, Ariz., with 897.14 and 32.86.

Fort Apache, which two years ago had unusually heavy rates of sickness, has now rates that are considerably below the average of the

Army. The medical director, in a report of an inspection of this post recently made, speaks of its general sanitary condition as perhaps superior to that of any post in the department. The whole occupied area is thoroughly policed and kept in the nicest order. "The system of preventive sanitation is carried out fully, and this post may now be considered one of the very healthy posts of the department, showing the wisdom and result of careful sanitary attention. The commanding officer takes constant personal interest in this matter and cordially seconds the medical staff in all matters pertaining to their department."

DEPARTMENT OF CALIFORNIA.

Average strength, 1,390 men; admission rate, 975.54; noneffective, 34.51; death, 7.91; discharge, 20.14. Except venereal diseases all causes of disability had in this department smaller rates than the average of the Army. The post on Alcatraz Island had only 694.91 admissions and 18.37 noneffective per thousand of strength; Benicia barracks, 792.45 and 23.43; Angel Island, 826.09 and 40.04, and the Presidio of San Francisco 1,189.80 and 39.17.

DEPARTMENT OF THE COLUMBIA.

Average strength, 1,382 men; admission, 788.71 per thousand; noneffective, 24.68; death, 5.79; discharge, 13.75.

Fort Walla Walla, Wash., was the only post in this department which had rates higher than those of the Army. Its admissions were 1,502.65; nonefficiency, 57.29, chiefly due to venereal diseases and influenza. All the other posts had exceedingly low rates, as Vancouver barracks, Wash., with an average strength of 440 men, 518.18 admissions, and 15.06 nonefficiency; Fort Canby, Wash., 698.11 and 22.93; Fort Spokane, Wash., 659.57 and 27.22; Boise barracks, 798.17 and 16.97; and Fort Sherman, Idaho, 781.76 and 23.63.

HEALTH OF INDIVIDUAL POSTS.

Omitting from consideration detachments, arsenals, and small posts, the recruiting depots, Columbus barracks and Davids Island, in the Department of the East, had the largest admission rates. The rates of the former have always been high, and are due to the location of the depot within the limits of a city. Reference has been made to this in previous reports from this office. During the past year one-third, 333.88 per thousand of the strength present, was affected with venereal diseases, and the disability caused by this was equal to 24.08 men per thousand of strength constantly sick during the period devoted to perfecting the physique of the recruits and their education as soldiers. At Davids Island the admission rate has been steadily increasing for the past five years from causes that are not shown clearly in the reports.

Outside of the depots for recruits the military posts having admission rates in excess of 2,000 per thousand of strength are Forts Bliss and Clark, Tex., Mount Vernon barracks, Ala., Fort Myer, Va., and Washington barracks, D. C. The occupation of the new post of Fort Bliss will no doubt lessen the malarial rate hereafter in this locality. The contamination of the spring-water supply by surface inflow is believed to be the cause of the autumnal fevers at Fort Clark, where the use of distilled water is expected to suppress their prevalence. The reports do not indicate why the rate at Mount Vernon barracks is so high, unless on the allowable assumption that the dissi-

pation which gives large rates for alcoholism and venereal diseases increases the susceptibility to all other causes of disability. At Fort Myer and Washington barracks the increased rates result from autumnal fevers; at other seasons these two posts have excellent records.

The noneffective per thousand of strength was greatest at Forts Clark, Ringgold, McIntosh, Myer, and Reno, due at Ringgold and McIntosh to dengue and typhoid fever, respectively, and at the others mentioned to the severity of the autumnal fevers.

Some of the minor posts, such as those at Sandy Hook, N. J., Eagle Pass, Tex., and Poplar River, Mont., had large rates.

The posts having the best records for the year are Fort Custer, with 333.33 admissions and 13.17 noneffective per thousand of strength; Vancouver barracks, with 518.18 and 15.06; Fort Yellowstone, with 520 and 20.77; Madison barracks, with 600 and 21.43, and Fort Niagara, with 666.67 and 17.38.

Continuing to omit the minor posts from consideration the death rate was greatest, 33.90, at Alcatraz Island, and 28.25 at Mount Vernon barracks. At the one 4 deaths occurred, at the other, 5; but the largest absolute number of deaths, 7, was reported from each of two posts, Columbus barracks and Fort Custer. Four of those at the latter post were caused by injury.

The rate of discharge for disability was greatest, 50 per thousand men, at Fort Barrancas, where 6 men were discharged; but the largest absolute number was 16 at each of two posts, Forts Leavenworth and Meade.

THE PREVALENCE OF SPECIAL DISEASES.

SPECIFIC FEBRILE AND ACUTE INFECTIOUS DISEASES.

The statistics of these diseases, including erysipelas, tonsillitis, and cases reported as typhomalarial fever, for the past year do not differ materially from those for the year preceding it. The admission rate was 171.19, of which 81.15 was credited to influenza, 49.91 to tonsillitis, and the remainder chiefly to mumps, measles, dengue, diphtheria, and enteric fever, the whole giving a constant sickness of 4.50, of which 1.34 was occasioned by influenza and 1.19 by enteric fever. The death rate was 1.01, of which .62 represents the fatal cases of the last-named disease.

Cerebro-spinal fever.—Two cases, both white, were reported, one fatal in its issue at Fort Riley, Kans.; the other favorable at Fort Porter, N. Y.

Chicken pox.—Twelve cases were reported among enlisted men, 9 at Fort Monroe, Va., where smallpox was present during the year, 2 at Jefferson barracks, Mo., and 1 at Fort Logan, Colo. Several cases occurred among children at Fort Yates, N. Dak., and it is not unlikely that there may have been unrecorded cases among civilians at other posts.

Dengue.—An epidemic of this disease prevailed at Forts Ringgold and Brown, Tex. At the former post the epidemic was prolonged during the months of July, August, and September. The infection was imported from the adjacent town of Rio Grande by the daughter of an officer on her return from a visit to a Mexican family; but its spread in this instance was confined to the members of her own family. The first case to appear on sick report occurred in a Seminole Indian scout who had just returned from courier duty along the river, where the disease was extensively prevalent; but there was no spread among the troops until the garrison was augmented by a squadron of cavalry from Okla-

homa. These men became immediately affected, and it was not until many of them had been taken sick that the fever began to appear among the men of the original command. One hundred and fifty-four cases were reported in the garrison, numbering, including Indian scouts, 178 men; and most of those whose names do not appear on sick report were affected, but not so seriously as to render excuse from duty needful under the circumstances. Most of the women and of the civilian employes and all the older children were affected; children under 6 years of age escaped attack. In some instances the fever was developed within a few days of the first exposure to infection; but in others six or eight weeks intervened between the first exposure and the development of the disease. The attack was ushered in with malaise, vertigo, and headache lasting from a few hours to one or two days, when an accession of fever was noted, the temperature rising to anywhere from 100° to 105° F., and coincidentally were developed the pains which have caused the name breakbone fever to be applied to this affection; but the muscular system as well as the bones and joints was involved in the pains. An urticarious or papular eruption was observed only in a few exceptional cases. Nausea, hebetude, and insomnia characterized the course of the disease, which ordinarily lasted from four to six days. None of the antipyretics proved effectual in reducing the abnormal temperature. Acetanilid, antipyrin, phenacetin, quinine, and salicin were tried thoroughly. Evidently the disease was self-limited. The routine treatment finally adopted was: (1) Control of the bowels by calomel and bicarbonate of soda in constipation, or by camphor and opium in diarrhea. (2) Rest in bed—the most important factor in the treatment. Those admitted to hospital usually made a prompt recovery, while those treated in quarters, owing to lack of hospital accommodations, dragged along slowly, and in many instances had to be admitted to hospital later. It was observed also that those who gave up promptly and took to bed on the appearance of the fever made a more rapid recovery than those who refused to succumb until forced to do so by the advance of the disease. (3) Quinine in tonic doses, rather as a placebo during the active stage, and with iron and strychnine as a tonic during the convalescent period. (4) Morphine hypodermically or chloral and potassium bromide by the mouth, to control insomnia. Under this treatment patients made an entirely satisfactory recovery.

At Fort Brown the epidemic prevailed during the months of June, July, and August, introduced from the city of Brownsville, where it probably existed during May. The only difference in the disease as presented at this post was the frequent presence of a fleeting erythematous eruption during the febrile period. Young children were exempted from attack.

Diphtheria.—Twenty cases were reported, 16 at one post, Fort Yates, N. Dak. At this point the disease appears to have effected a lodgment after its introduction last year among the children. Two outbreaks have occurred since then, the first in September, the second in November. The primary case of the first group, in the person of a soldier of Company A, Twelfth Infantry, was malignant, with thick gangrenous patches, and fatal on the third day. The hospital corps attendant who had charge of this case then became affected, and immediately afterward the third case, also from Company A, Twelfth Infantry, was developed. The company was sent into the field and its barracks fumigated with sulphur, scrubbed, and dried. No other case occurred at this time among the infantry soldiers, but an officer belonging to Company F, Eighth Cavalry, became affected. On November

22, a case was taken from the infantry barrack room and 10 other cases were afterward reported. This barrack is an old one-story low-ceiled log house. The first case of the first outbreak was the only fatal one.

A malignant, fatal case occurred in a child at West Point, N. Y. Strict quarantine measures were adopted and continued for several days after the termination of the case, when the bedding, clothing, rooms, and furnishings of the family were thoroughly disinfected. No extension of the disease took place.

Enteric fever.—One hundred and fifty-nine cases of this fever occurred, and 3 cases reported as typhomalarial; 16 of the former and 1 of the latter died. Fort McIntosh, Tex., reported 18 cases; Whipple barracks, Ariz., 16; Fort Reno, Okla., 14; Fort Monroe, Va., 8; Fort Leavenworth, Kans., 7; Jefferson barracks, Mo., Fort Sill, Okla., Fort Robinson, Nebr., and Madison barracks, N. Y., 5 each; the remaining 79 cases distributed among 39 posts.

Sporadic cases of this fever at posts where the sanitary conditions are good were no doubt imported; this is known to have been the case in certain instances. In others the prevalence of the fever in adjacent civil communities accounts for the presence of occasional cases among the troops. It is only when several cases are developed in rapid sequence at a post that local causes are assumed to be concerned. In most of such instances, as at Forts Reno and McIntosh, Tex., the use of impure river water is considered the probable cause. The fever occurs at a time when the impurity of the water is greatest, and is associated with low remittents. For many years past no case of enteric fever has occurred at Fort Reno in the large part of the population of the post which drinks exclusively the water from Caddo Springs.

During the year an epidemic occurred at the Fort Leavenworth military prison. Twenty-seven prisoners and one member of the guard became affected. In July, 3 cases; in August, 10; in September, 9; in October, 5; and in November, 1. The mean daily strength of the prisoners was 526, of the guard 112. On the appearance of the first 3 cases the general water supply from the Missouri River was considered to be the source of infection. No case of the disease had occurred at the post of Fort Leavenworth since the previous February, although a number of cases had appeared in the city of Leavenworth, the waterworks of which supply both post and prison. But the almost simultaneous appearance of so many cases in August among different classes of prisoners working at various points and at different kinds of work, added to the fact that no case had occurred at the post, indicated that some local cause or condition other than the water supply existed at the prison to give rise to the epidemic. The length of time the affected prisoners had been in prison excluded the possibility of infection prior to arrival. One man a few days before his admission into the hospital had undergone fifteen days confinement in the solitary cells on restricted diet. Infection from man to man was excluded by the fact that the patients came from detachments working at different points and quartered in different buildings. Prisoners, as a rule, present themselves for treatment on the slightest pretext, and at this time especial care was taken to admit all to hospital who presented any symptoms of the disease. This also negatives the idea of infection from each other. There was no overcrowding at the time, and the ventilation was considered satisfactory. There could be no reason for suspecting the food, as the prisoners had no means of obtaining milk or other uncooked articles of diet. The sewerage system of the prison is unsatisfactory, but after due consideration of its defects it was considered that these could not account for the typhoid outbreak. By

a process of exclusion the ice supply fell under suspicion, and investigation showed the likelihood of its contamination by sewage. The ice for the post was obtained from a pond on the reservation, but that for the prison was cut from a cove formed by the jutting out of a sand bar into the river. An open sewer ran near the cove with natural drainage toward it. Three or four weeks after the disuse of this ice the epidemic subsided.

Prisoners generally drink excessive quantities of ice water, due in some cases to the heat in the shops and the character of the labor on which they are employed, causing free perspiration, and also, no doubt, because frequent trips to the water bucket is a diversion and relief to them. To this habit, and their tendency to overeat, which renders them prone to gastro-intestinal disorders, the post surgeon referred the heavier incidence of the disease on the prisoners than on the members of the guard.

Influenza.—The outbreaks of influenza occurred in November and December. Many posts were visited, particularly Forts Assinniboine and Keogh, Mont.; Forts Sam Houston and Bliss, Tex.; Fort Leavenworth, Kans.; Fort Sheridan, Ill.; Fort Niobrara, Nebr.; Fort Yates, N. Dak.; Fort Huachuca, Ariz.; Presidio of San Francisco, Cal.; Fort Walla Walla, Wash.; Fort Monroe, Va., etc. At first a few cases were developed which suggested a different type of pharyngeal or bronchial affection than that due to ordinary exposures. Immediately afterwards the number on sick report increased so suddenly and rapidly as to leave no doubt of the epidemic character. The disease usually manifested itself by chilly sensations in the afternoon. Next morning frontal headache and febrile action were developed with muscular pains and cough. The evening witnessed all these symptoms intensified, with the temperature at its highest point, 101 to 104. The muscular pain and tenderness were greatest about the chest; cough, when present, was insignificant in comparison with the severity of the chest pains. Conjunctival and pharyngeal congestion was usual. On the morning of the third day the temperature was nearly normal; in few cases did it fail to reach this point in the evening. On the fourth day the patients in most cases were well, or with merely a sense of lassitude or muscular pain remaining. Grave complications or sequelæ were uncommon.

Measles.—The largest number of cases of measles, 65, was reported from the recruiting depot at Columbus barracks; the other depots, Jefferson barracks, Mo., and Davids Island, N. Y., had but 1 each. At Fort Monroe, Va., 61 men became affected. The disease was present at 20 posts other than those just mentioned, but at none was there such a prevalence as at the recruiting depot and Fort Monroe. The whole number of cases at the 24 affected posts was 204. Measles appeared among the children at several posts without spreading to the men in barracks. At camp at Eagle Pass, Tex., the cases—4 in number—which occurred were in the family of the post surgeon. Generally the disease was introduced from neighboring settlements, but in a few instances, as at Fort Douglas, Utah, it was brought by a recruit from Columbus barracks.

Mumps.—Two of the recruiting depots, Columbus and Jefferson barracks, reported 119 of the total of 337 cases reported from all the posts. The infection was probably spread from these depots.

Scarlet fever.—Only 3 cases of this fever were recorded—2 at Fort Leavenworth, Kans., and 1 at Fort Pembina, N. Dak. Centers of infection appeared among the children at Whipple barracks and Forts Assinniboine, McHenry, and Monroe, but by proper medical supervi-

sion the disease in these instances was restricted to the house in which the infection made its first appearance. As illustrating the methods of post surgeons in such cases, the following by Lieut. G. M. Wells, assistant surgeon, Fort Grant, Ariz., is submitted:

On November 15 two cases of scarlet fever were discovered in the hotel at this post. They were both in children, aged 2½ and 10 years, respectively, members of a ranchman's family that had been visiting in the East, and were on their way home at the time they stopped here. Both cases were mild, and in a few days were removed to their home some distance from the post, although not entirely well at the time. After reaching home a third child, which includes all the children of the family, was taken sick with the same disease, but so far as I know it has not been transmitted to other families. Immediately upon the arrival of the family at the post I was sent for and made a diagnosis of scarlet fever. I then forbade any member of the family to go out of doors for any purpose whatever except the husband to go to the post hospital for such things as I wanted to use in the treatment, and gave positive orders that no one should go near their room, which was in a detached building about 20 feet from the main hotel building. Having taken this precaution, I went immediately to the post commander and laid the matter before him. There being no other place on the post for them to go, and having already infected the room in the hotel, it was decided to let them remain there. A circular was issued by the post commander setting forth the facts, and prohibiting all children from going near the hotel. It also directed all persons about the hotel to comply strictly with the directions of the post surgeon in the matter. A jar of chloride of lime was taken to the hotel and a large quantity of solution, 4 ounces to the gallon, was prepared. Sputum, urine, and feces were collected in vessels containing this solution, and were required to stand six hours before being poured into the privy vault. There was no vomiting after the cases came under my care. All clothes that were worthless were burned at once, and those that were of value were left in the room for disinfection. The meals for all members of the family were placed near the door, and when the party carrying them was gone the husband would get them and take them inside where they were served. As soon as they were through eating all scraps were thrown into a vessel containing disinfecting solution, while all the dishes and trays were thoroughly washed in it and immediately placed outside the room and were carried away by other parties. All this was kept up until the family left, when I set about the work of disinfecting the room and contents. Large tin vessels were procured, into which was poured the standard solution of chloride of lime. All soft articles, except two felt mattresses and two pillows, were placed in these receptacles, where they were left twenty-four hours. All the woodwork of the room and every piece of furniture was thoroughly scrubbed with the standard solution. This done, all the cracks were carefully stopped, drawers pulled half way open and 10 pounds of sulphur burned in the room, which contained about 2,100 cubic feet of air space. At the end of twenty-four hours the smell of sulphur was so strong that one could not breathe in the room. The door and windows were then opened and everything carried into the open air. The soft fabrics were now taken out of the solution and sent to the laundry. The furniture was left out two days and nights and the door and windows left open during that time. During the fumigation of the room and the airing of the furniture one mattress and two pillows were suspended, while one mattress was left lying on a woven wire spring. At the end of two days the room was thoroughly cleansed again and the furniture put in place. I do not think there is any danger of contagion from this room at all, as I did my work most thoroughly, and I believe the family, which is a very intelligent one, carried out my instructions strictly. If other cases should develop it will be due to the dilapidated condition of the room, which is adobe, rendering it difficult of disinfection, and not to inefficiency of the methods of prevention that have been employed in the case; besides, the dryness of the atmosphere and the extreme heat of the sun, even in the month of November, are potent factors in the destruction of disease germs.

Smallpox.—Three cases were reported, 1 each at Fort Monroe, Va., Fort Hamilton, N. Y., and in the field; none fatal. No extension of the disease from any of these cases was permitted.

Tonsillitis.—Cases making a total of 1,262 were reported from nearly every military post, the largest number from any one post being 58, 55, and 50, respectively, from Jefferson barracks, Mo., Fort McPherson, Ga., and Fort Snelling, Minn. As was stated in my last annual report, it is impossible to say what proportion of these consisted merely of a local inflammation of a portion of the digestive tract and what propor-

tion was due to a specific cause entitling the cases to be regarded as belonging to the class now under discussion; but remarks are so frequently appended to sanitary reports indicating the connection of these cases with defective drainage and sewerage, polluted soils, and neglect of proper ventilation of dormitories, that it would seem advisable from the standpoint of practical sanitation to regard them as more intimately associated with the specific febrile and acute infectious diseases than with the diseases of the digestive system.

Yellow fever.—The only recognized danger from this disease during the past year threatened the garrison of Fort Barrancas, Fla., through the invasion of Pensacola, Fla., where early in August two deaths were acknowledged by the board of health to have been occasioned by this fever. The troops were ordered to Fort McPherson, Ga., leaving Fort Barrancas August 12, and returning November 17, after the occurrence of frost gave assurance of security against epidemic sickness.

DIARRHEAL DISEASES.

The admission rate for diarrheal affections was 98.47, or somewhat less than that of the previous year, 110.84. Of the total rate as just stated, 94.99 was due to diarrhea, including cholera morbus, and only 3.48 to dysentery. The average duration of each case of the former was 3.2 days; of the latter, 12.9 days. On account of the short duration of the cases the nonefficiency caused by them was relatively small, about 1 man (0.96) constantly sick out of every thousand. The absolute number of dysenteric cases was 88, of which only 1 died. No case of diarrhea proved fatal. The post having the highest rates for these diseases was Fort Clark, Tex., with 455.42 admissions, and 5.16 constantly noneffective per thousand of strength.

MALARIAL DISEASES.

The rates for malarial diseases were increased during the past year to 93.64 admissions and 2.45 noneffectives per thousand of strength from 63.75 and 1.76 during the previous year. Of 2,368, the absolute number of cases, 1,622 were intermittents and 746 remittents and other malarial diseases. The average duration of the intermittents was 6.2 days; of the remittents 15.9 days; of the others, mostly continued malarial fevers, 22.3 days. The whites suffered more than the negroes, their respective admission rates being 94.87 and 47.60; but the only fatal cases were among the latter, 2 cases of continued fever at Fort Bayard, N. Mex. The largest number of admissions, 853.66, was reported from Washington barracks, D. C., giving a constant sick rate of 11.80. Most of this sickness occurred in the autumn months. The endemics at this post have been attributed by all the medical officers who have investigated the subject to the reclamation of the Potomac flats, work on which is now in progress, and to the proximity of the James Creek Canal. The highest rate of nonefficiency, 19.53, was reported from Fort Clark, Tex., where, although the admission rate was only 334.39, the preponderance of remittent and continued cases occasioned the high rate of nonefficiency. It is hoped that an improved water supply will lessen the rates at this post hereafter. For several years past it has been remarked that the flooding of the spring by surface water during heavy rains has always been followed at an interval of a few days by the entry of a series of cases of remittent fever on the sick report. Fort Myer, Va.; Jefferson barracks, Mo.; Fort Bliss, Tex., and

Fort Hamilton, N. Y., also had high rates for malarial fevers. The post surgeon at Fort Sill, Okla., Capt. W. Fitzhugh Carter, in one of his sanitary reports, urges the use of distilled water from the ice machine aerated by passing through a homemade filter. From his experience and observation at this post he concludes that the germ of malarial disease is conveyed from the soil by surface or subsoil water to the streams, springs, and wells in the vicinity, and that therefore any water not specially treated with a view to sterilization is likely to be harmful. "There is," he says, "almost conclusive evidence that the water of the streams in this section of the country is a concentrated malarial poison, and at certain seasons of the year will give rise to malarial fevers in a large percentage of those who drink it," and he looks to the use of distilled water for the same beneficial results that have already been obtained at Fort Brown, Tex. At a post, Fort Niobrara, Nebr., from which malarial fevers are seldom reported, there occurred in September and October 26 cases, 17 intermittents and 9 remittents. There was no recognizable local cause of malarial disease in the vicinity, and no case of such disease among the citizens of the neighboring town of Valentine; but as on investigation the post surgeon found that many of the affected men were recruits recently from Jefferson barracks, and all of them had suffered from malarial fever at some previous period, he regarded the unusual outbreak of sickness as recurrences of malarial affections in susceptible persons under influences which failed to develop disease in the garrison generally.

At Fort Huachuca during the month of August a malarial outbreak was occasioned by unusual meteorologic conditions. Forty cases of remittent fever occurred during the month, and at its close new cases were arising daily. The rainfall had been the greatest ever recorded—9 inches. The ground became thoroughly saturated, a phenomenal growth of vegetation of all kinds was developed, and mosquitoes made their appearance for the first time in the history of the post. Cellars became flooded, but the evils arising from this were remedied as far as possible by prompt attention.

TEXAS FEVER.

Lieut. C. C. McCullough, who has studied Texas fever from El Paso to Brownsville, is inclined to view it as a subacute sunstroke, or a condition in which there is a partial inhibition of the functions of that part of the sympathetic nervous system which regulates the animal heat. His report is as follows:

I have seen in this region typical and atypical cases of the following varieties of continued fevers: (1) typhoid fever; (2) malarial remittent fever; (3) simple continued fever, or febricula; (4) catarrhal fever, or influenza; (5) dengue fever; and, in addition, (6) Texas fever, which I believe to be distinct in etiology from all the others.

To take up the consideration of the above fevers seriatim:

1. Typhoid fever.—(A) In Texas fever there is, so far as I have been able to observe, no discoverable connection with sources of typhoid infection. Contrary to the experience of Capt. William B. Davis, Medical Department, U. S. Army, quoted below, those cases I have seen have not been in soldiers from any particular barracks or mess, nor confined to those living to the leeward of any particular drain or other probable source of infection of that class. The complaint at the places and times when it is prevalent affects men indiscriminately living in various parts of the post. Though I have heard varying opinions from many officers on this complaint, the only literature available to me on the subject of Texas fever is a report by Capt. William B. Davis, Medical Department, U. S. Army, in the report of the Surgeon-General of the Army for the year ending June 30, 1893. He says:

"In the summer of 1892, while post surgeon at Fort Clark, Tex., 30 or 40 cases of so-called Texas fever, a hybrid in symptoms between typhoid and malarial

remittent fever, though not amenable to the treatment of either, came under my care. In every instance the disease was found only among those men whose barracks were to the leeward of an open drain (about 50 yards distant) *and who did fatigue duty in the broiling sun* [the italics are mine—C. C. M.]. That this drain was a potent factor in producing the disease is conclusively established by the fact that there were from 10 to 15 laundresses' quarters on the windward side of the drain (occupied by married soldiers and their families) and not a single case appeared among them, nor did any case appear in the officers' row, which is also to the leeward of the drain, but at such a distance that the poison would necessarily be so diluted as to be innocuous. * * *

That the drinking water was not to blame is, I think, proven by the fact that the same water used by the men in barracks was also used by the families of the officers and of the married soldiers. * * * Again I had a considerable practice in the adjacent town of Brackettville, and though their sole water supply was the same as that used by the post, not a case of fever occurred."

At no post has it seemed possible that any cases were due to an infected water supply; in some posts, as at this one, no water being used for drinking purposes except condensed water. The fact that Capt. Davis' cases appeared in the barracks and not in the married soldiers' or officers' quarters, I do not believe to be due to the drain, but rather, as stated below, to the hot climate in conjunction with the "fatigue duty in the broiling sun," which latter was not done by the officers or their families, the families of married soldiers, nor probably to a great extent by the married soldiers themselves, these usually being in large proportion noncommissioned officers. If the suspected poisonous substance in the drain was not diluted by the air in 50 yards conveyance, it seems likely it should have reached in some degree the officers' quarters farther to the leeward. It is also probable the peculiar poison would be more widely disseminated in the neighborhood and cause similar cases elsewhere. Besides, the facts stated do not point to typhoid fever as the infection. Capt. Davis states that he does not believe the disease to be typhoid. Osler says: "Filth, bad sewers, or cesspools can not in themselves cause typhoid fever, but they furnish the conditions suitable for the preservation of the bacillus and possibly for its propagation." The large majority of cases of typhoid fever is believed by most authorities to be due to infected drinking water; in most cases of Texas fever, as stated, the only drinking water is condensed. I have never been able to trace any cases to infected milk or to personal contact with persons suffering from typhoid fever.

(B) The temperature course in many cases is very similar to that of typhoid fever. I have often observed a step-like ascent for several days, a persistence near the fastigium for a few days, then a gradual decline. The morning temperature is generally somewhat lower than the evening temperature, though in some cases the exacerbation takes place in the morning. In convalescence the morning temperature is usually subnormal. I have seen it as low as 95° F. In occasional cases there is more marked remission, the curve more nearly approaching that of malarial remittent fever. The temperature course is, however, the only point of similarity, to my mind, between Texas fever and typhoid.

(C) In regard to the pulse in typhoid fever, Osler says "it is increased in rapidity in proportion to the height of the fever." In all the cases I have seen that were known to be typhoid fever this has been true. Here is one of the most marked and singular peculiarities of the Texas fever: The pulse never becomes accelerated or weakened in proportion to the height of the fever; it is in nearly all cases slow and strong throughout a long attack of the fever, in some cases being subnormal. I have seen a temperature of 104° to 105° F. sustained for several days, with a pulse beat never above 70 to the minute. In convalescence the frequency of the pulse is generally considerably below normal. The pulse remains strong throughout the course of the disease. Albuminoid degeneration of the heart muscle does not take place as in typhoid.

(D) Osler says: "In any long series of cases of typhoid fever diarrhea will be found to be a prominent feature of the disease." I have never seen diarrhea in Texas fever; on the contrary, the bowels are usually constipated, requiring enemata for their evacuation. I have never observed the pea-soup appearing discharge in these cases.

(E) There is never tympanitis, or gurgling in right iliac fossa, or localized points of tenderness in the abdominal region; the cases are never complicated by intestinal hemorrhage or peritonitis, which it is well known occur in a certain proportion of cases in even mild epidemics of typhoid fever. In fact, the only intestinal trouble seems to be a liability to a relapse of the fever from slight errors in diet during convalescence. On this point one physician informed me he based his diagnosis of typhoid fever; but it seems to me in any protracted, continued fever errors in diet are liable to lead to recurrence.

(F) In no case presenting the peculiar complexus of symptoms of the Texas fever have I ever seen the rose spots of typhoid fever, or in fact any eruption.

(G) In Texas fever there is very little emaciation or prostration in lengthy cases, contrary to the universal falling away of typhoid patients; this even though the fever lasts quite as long and is just as high as in an ordinary case of typhoid. In fact, throughout the disease there is a remarkable sense of wellbeing, the patient probably having a fair appetite and wishing to read the newspapers when his temperature is 104° or 105° F. There is no preliminary epistaxis in Texas fever. The "typhoidal state" is never developed—no sordes on teeth, cracked tongue, jactitation, etc.

(H) The occurrence of typical cases of typhoid fever in the same locality showing none of the peculiarities of the Texas fever is a point in the diagnosis worth consideration.

(I) I have never seen or heard of a fatal case of the genuine Texas fever, so the impossibility of getting at the morbid anatomy of the affection will necessarily render its study and final elucidation difficult. When the fact is considered that the only symptom that resembles typhoid fever is in some cases the temperature curve, it seems pretty well established that, whatever the nature of the disease in question, it is not typhoid fever.

2. Malarial remittent fever.—(A) If the fact be allowed that the drain was at fault in producing the cases of fever described in the above-quoted report of Capt. Davis, it seems to me the conditions mentioned would limit the possible poisonous principles to malaria, i. e., at least considering the present state of scientific knowledge in regard to zymotic poisons. It might of course be possible that there exists in the Rio Grande region a special poisonous principle which produces a peculiar fever, but that it should be wholly confined within the limits of that climatic region and should affect chiefly a particular class of people seems, to say the least, highly improbable. Capt. Davis says: "There is no description of this disease to be found in any work I have consulted, and a new arrival, if confronted with it, thinks at first he has typhoid to deal with, but the sense of wellbeing, the comparatively slow and strong pulse, the absence of marked iliac tenderness, etc., make him change his diagnosis to malarial fever (remittent), but when quinine has been ordered and the temperature immediately and invariably goes up one or two degrees, he is in a quandary."

This last is one of the most peculiar points in connection with this fever—the therapeutic inefficiency of quinine. It fails in not one case, but in everyone, and generally, as Capt. Davis says, runs up the temperature instead of decreasing it. I have in several cases tried quinine continuously and faithfully, but always with the result stated. The fever is not reduced nor the disease shortened by the use of antiperiodics; this point alone will serve to eliminate a possible malarial origin. It is well known that in all climates and in all races quinine is entirely adequate to control malarial diseases. Osler says in regard to malarial remittent fever: "The fever yields, as a rule, promptly to quinine, though here and there cases are met with, rarely indeed in my experience, in which they are refractory."

(B) The same author says: "The diagnosis of malarial remittent fever may be definitely made by the examination of the blood. Vandyke Carter, in his monograph, alludes to the value of this method in the fevers of India. In many cases here we are at first unable to distinguish between typhoid and continued malarial fever without a blood examination. A more wide-spread use of this means of diagnosis will enable us to bring some order out of the confusion which exists in the classification of the fevers of the South. At present the following febrile affections are recognized by various physicians as occurring in the subtropical regions of this continent: (a) Typhoid fever; (b) typhomalarial fever—a typhoid modified by malarial infection or the result of a combined infection; (c) the malarial remittent fever, and (d) continued thermic fever (Guitéras). In these various forms, all of which may be characterized by a continued pyrexia with remissions or with chills and sweats (for we must remember that chills and sweats in typhoid fever are by no means rare), the blood examination will enable us to discover those which depend on the malarial poison. In this latitude we have not the opportunity of seeing many of the protracted and severe cases, but I am inclined to think that future observations will show that apart from the thermic fever there are only two forms of these continued fevers in the South, the one due to the typhoid and the other to the malarial infection. The typhoid fever of Philadelphia and Baltimore presents no essential difference from the disease as it occurs in Montreal. Dock has shown conclusively that cases diagnosed in Texas as continued malarial fever were really true typhoid."

In my observation of the continued fevers of the Texas region I have paid particular attention to the microscopic examination of the blood. The plasmodium malarie in any of its forms has been undiscoverable in all cases in the blood of patients suffering from the Texas fever, while the organism has been generally

detected in typical malarial cases occurring synchronously and which succumb to quinine.

(C) The temperature curve of Texas fever does not show the marked remissions that we expect and see in many cases of malarial remittent fever.

(D) The fact that the pulse in Texas fever does not increase in rapidity and lose in strength in proportion to the height of fever may be here mentioned.

(E) There are no chills or sweats in the Texas fever.

(F) The occurrence of typical malarial cases in the same locality may be mentioned as an important point in differentiating the two affections. The above points seem to me to eliminate malarial remittent fever from any possible connection with Texas fever.

3. Simple continued fever.—The much greater severity and longer duration of the Texas fever will serve to distinguish it from febricula. Osler defines febricula as "fever of slight duration." The longest limit set by him for it is seven days. He says the most important point in the diagnosis of simple continued fever is "the rapid disappearance of the pyrexia." Acute gastro-intestinal disturbance and herpes on the lips are unknown in Texas fever. Again he says: "A form of low fever with or without chills has been described as sometimes following exposure to foul odors of sewer gas." He mentions this under the head of febricula. It is evident, however, that if such an affection should be definitely found to exist, it should be separately described as an independent disease. Moreover, "a good deal of doubt exists in the minds of the profession about these cases of so-called sewer-gas poisoning. It is a notorious fact that workers in sewers are remarkably free from disease, and in many cases which have been reported the illness may have been only a coincidence." In this connection see the report of Capt. Davis, quoted above. •

Cases of febricula of various types are occasionally met with throughout the Texas region, and are generally readily recognized.

4 and 5. Influenza and dengue.—The epidemic character of these diseases, the catarrhal and nervous symptoms of the former, its various sequelæ, and the eruption; the characteristic recurrence and the violent muscular pains of the latter disease, of course, make confusion with them impossible. I have seen epidemics of both these diseases along the Rio Grande. There remains to be described:

6. Texas fever.—The cases of this affection are all sufficiently alike to convince the observer that it is a peculiar type of fever of some description, and, as stated above, it is enough different from all the ordinary varieties of fevers to justify the conclusion that it should not be classed with them.

There are, as a rule, no prodromata in Texas fever; the patient claims to have felt well up to the time of the attack. Not often does he complain of a chill or preliminary chilly sensation. He comes to the hospital saying that "fever" has attacked him some hours previously, and complains of headache, often of pains in the back and limbs. Sleeplessness is often a feature of the disease, especially in its early stages. Those above mentioned comprise all the nervous symptoms. In a very few cases I have seen a mild delirium at night, described by the nurse as "flightiness." I have never seen symptoms of gastro-intestinal irritation. Very rarely indeed has the patient vomited even once during the course of the disease. I have never seen diarrhea, and in nearly all cases there is a distinct constipation. In a few cases the patients have complained of diffuse abdominal pain, and upon examination in these cases there has been found a rigidity of the whole muscular wall of the abdomen (especially the recti muscles), which is probably due to the accompanying constipation. Enemata always produce a relief of this pain. A very peculiar feature is that mentioned above, viz, the remarkable slowness and strength of the pulse combined with high temperatures. I have often seen the pulse normal with a temperature of 104° or 105° F. Sometimes it is subnormal while the temperature is comparatively high. Both temperature and pulse are often subnormal during convalescence. The pulse respiration ratio is usually about the normal. The temperature ranges in height according to the severity of the attack, in mild cases from 100° to 103° F.; in the severer cases from 103° to 105° F., or even to 106° F. The fastigium is generally rapidly gained, is maintained for a greater or less period, and the fever then terminates by lysis. In some cases, as mentioned above, the temperature curve resembles that of typhoid fever, but these cases show not one single other feature of typhoid fever. The duration of the disease is from two to six weeks, the average duration being, in my opinion, about three to four weeks. There is usually a slight morning remission; rarely this may come in the evening. There is a remarkable sense of well-being throughout the disease; this has been remarked, I think, by all observers. The patient continually asks to be allowed to sit up, to have a more liberal diet, etc. There is a very slight loss of weight and strength even in protracted cases. I have thought, though I would not as yet state it as a settled fact, that there is more of a tendency to contraction of the pupil than in most febrile diseases. I have never seen any skin eruption with this complaint.

The above gives, I think, a general picture of the symptomatology of Texas fever. I have not detected any constant or at all marked enlargement of the spleen. I have not seen or heard of a fatal case of this disease. I do not believe it would prove fatal except in a very weak organism or where antipyretics are injudiciously used. The soldiers (those most liable to be attacked) are a picked class, and, as a rule, of robust constitutions. That the prognosis is so good is a very fortunate circumstance, but it will tend to make the definite settlement of the etiology of the disease a very difficult question.

The diagnosis is not, I think, difficult as a rule, if the case is watched sufficiently long and well. Of course, in all continued fever cases symptoms of malarial or typhoid infection should be anxiously looked for in regions where these diseases are liable to occur.

Etiology.—My opinion as to the cause of Texas fever may be gathered from what I have written above. I think the fever due entirely to the peculiar climatic conditions of this region. To speak more definitely, the great length of the hot season and the height and continuance through a great part of the day of the maximum temperature, coupled with exposure to and work in the hot sun, especially in those who are by reason of previous habitation in northern climates unacclimated to this portion of the country. The dryness of the atmosphere and comparatively small elevation above the sea level I believe to be the factors in the establishment of the peculiar type of the fever. Maj. Kimball, Medical Department, U. S. Army (Report of the Surgeon-General, U. S. Army, for the year ending June 30, 1893), says: "That the long-continued temperature of a southern Texas summer is largely instrumental in the production of the fevers which so often prevail, I think, admits of little doubt, and that exposure to the midday sun ought as much as possible to be avoided."

According to Capt. Davis (see above quotation) the fever was found at Fort Clark only among soldiers "who did fatigue duty in the broiling sun." Osler says: "Guitéras has called attention to a form of fever occurring in the South known in Florida as 'Florida fever,' in the Carolinas as 'country fever,' and in tropical countries as 'fièvre inflammatoire.' The cases last for a variable time and are mistaken for malaria or typhoid, but he believes them to be entirely distinct and due to a prolonged action of the high temperature. He has called the condition a 'continued thermic fever.'"

I believe Texas fever to be a form of Guitéras's "continued thermic fever," and I have of late so diagnosed the cases I have met with in the column for cause of admission in the Monthly Report of Completed Cases. In my observation the disease has been limited to unacclimated soldiers who do considerable work in the sun and those civilians who have similar histories and environment. I have never known an officer to be affected with the disease, nor in a considerable practice have I seen any cases except in those exposed to the same conditions as the soldiers.

In spite of the universal scientific belief that most of such diseases are of bacterial origin, I do not believe any germ or organism is responsible for the existence of the so-called "Texas fever." Capt. Davis, after stating his belief that the drain mentioned above was at fault in producing those cases occurring at Fort Clark, says: "Finally the conviction was forced upon me that the materies morbi was a ptomaine generated in the intestinal tract, caused by a germ from without." With the utmost respect for the opinion of one of the most distinguished surgeons in the Army, I am compelled to say I do not believe the intestinal tract to be the fons et origo mali nor the portio invasionis in this affection. It seems to me that any disease affecting primarily the intestinal tract would lead to conspicuous intestinal symptoms, e. g., cholera, typhoid fever, dysentery. At Fort Hancock during a summer I spent there as post surgeon there was a good deal of genuine malarial remittent fever which affected only recruits lately reporting from Jefferson barracks; the great change in climate seemed to incubate the disease germs, e. g., Laveran organisms. I do not recall having observed there any cases of what I afterwards learned to differentiate as Texas fever. The malarial cases occurring there had no peculiar features, and were perfectly controllable by quinine or Warburg's tincture. I am of the opinion that the altitude at Fort Hancock (over 3,000 feet above sea level), coupled with the enormous daily range of temperature there, serves to counteract the at times excessive heat of the sun for a short time in the middle of the day.

I may as well state briefly here a theory which seems to me to account for the peculiar thermic fever observed in this and other tropical countries. In the more temperate regions of the United States, where the humidity of the atmosphere is great, exposure to excessive heat is often followed by insolation or sunstroke, or what may be called acute thermic fever—a continued form of fever resulting from high temperature not being described there. On the other hand, in this region, where the atmosphere is relatively dry, sunstroke is practically unknown. I have myself lived over twenty years in Texas, and I do not remember that I ever heard of (I know I have never seen) a case of sunstroke occurring here.

I believe that the acute thermic fever is replaced here by the continued form which attacks preferably, as stated, those unacclimated.

I believe Texas fever to be due to a paresis or, more strictly speaking, a partial inhibition of the functions of the sympathetic nervous system, due to excessive "wear and tear" of that apparatus, the locus minoris resistentiæ being the heat mechanism. Men exposed to and laboring in the sun day after day in this dry climate have an enormous amount of work thrown upon the sweat glands and the heat radiating and conducting functions of the body; this is especially felt by those who suddenly institute such a regimen and who have not had their tissues educated up to the required resisting point by heredity or acquired experience. In the north there is less evaporation and radiation, and hence there occurs a sudden inhibition, a throwing out of balance of the thermotaxic or heat regulating centers. In this dry region, where the radiating and evaporating functions after excessive and unaccustomed use get gradually overworked and consequently weakened, the fever sets in less acutely. The fever, according to this explanation, is due to a lessened dissipation of heat from the body rather than to increased metabolism of the tissues within the body. This explains the slight loss of weight and strength during long attacks of the fever. In fact all the constant symptoms seem explainable on the basis of a paresis of the sympathetic nervous system, the remarkably slow heart being due to an inhibition of the sympathetic accelerator fibers supplied to the heart (also probably to a slowing accompanying the lessened peripheral resistance from the accompanying paresis of the vaso-motor fibers). The constipation may be due to weakened function of the excitors of peristaltic movement and secretion—Meissner's and Auerbach's plexuses; the sleeplessness to lessened vaso-constriction in the brain believed to accompany if not cause the condition of sleep. Though probably more blood passes through the cutaneous vessels than normally, the heart perhaps not being slow enough to counterbalance the effect of the lessened resistance, there is not a corresponding loss of heat from the surface owing to the suspension of action of the sweat glands and the throwing out of balance of the thermotaxic centers in the medulla. The preservation of nearly normal weight of tissues is, as stated before, due to the fact that the patient suffers from a failure to expend heat and not from an increased production of heat due to consumption of the tissues or increased metabolism. The contraction of the pupil, if found by future observation to be a constant feature of the disease, is due to an inhibition of the dilator fibers of the iris and the consequent unopposed action of the circular fibers supplied by the third cranial nerve or motor oculi.

A few words in conclusion as to the best plan of treatment may not be amiss. The disease is self-limited, and with careful nursing will wear itself out, the vis medicatrix naturæ being all sufficient to control the majority of cases. On a removal of the cause (exposure to the sun) the balance of the heat centers is gradually and permanently regained.

As a method of prophylaxis I would recommend the avoidance, as far as possible, of all work during the middle hours of the day in the heated season in this climate. An entirely symptomatic treatment has seemed to me to be the best. Medication directed to the disinfection of the alimentary canal has in my experience always yielded negative results. Liquid diet, preferably milk, and careful nursing are, I think, the essentials. I think it better to carefully avoid modern antipyretics; they have not seemed to me perfectly safe in the treatment of continued fevers.

In this region I occasionally give these patients small doses of phenacetine to relieve headache when present. The best means of reducing hyperpyrexia is the application of cold water, according to the height of the fever, using either simple sponging of the surface of the body, the wet pack, or the cold bath. This reduces the temperature, temporarily adding much to the comfort of the patient, and I believe it serves to lessen the total duration of the disease. In rare cases the temperature seems to run up after the wet pack, but a second application has never in my experience failed to reduce the fever. The application of cold certainly seems to be the rational treatment of this fever, if my ideas as to its etiology are correct. Enemata at intervals control the constipation and seem indirectly to relieve all the symptoms. The sedative action of opium occasionally administered at night relieves the sleeplessness. I believe the use of opium (morphine hypodermically is the best method of administration) in the early stages of continued fevers to be tonic and conservative, adding much to the ability of the patient to withstand the ravages of the disease. During convalescence tonics are indicated, such as strychnine or small doses of quinine.

In conclusion, I desire to reiterate my purpose in preparing this necessarily very incomplete paper, that it may perhaps serve to elicit the opinions of others who have doubtless given thought and consideration to the subject, and thus contribute in a small measure to the "careful elucidation" of the intricate and interesting question of fevers in the South. I fully realize that such an important subject should not be lightly or superficially dealt with; that it is a subject for years of

study and the examination of hundreds of thermographs, and hence feel much hesitation in forwarding this preliminary paper. I make no claim that the question is definitely settled; I simply wish to state my opinion that Guitéras is correct in his description of a peculiar form of fever (first differentiated by him) in the extreme southeastern regions of the United States, and I believe that the so-called "Texas fever" will be found to be a variety (essentially the same, though varying possibly in some of its features) of his "continued thermic fever."

VENEREAL DISEASES.

The admission rate for venereal diseases, 73.08, was a slight improvement on that of the previous year, 76.73; but the constant sickness was 5.41, as compared with 5.33. Of the 73.08 admissions, 40.22 were occasioned by gonorrhea, 13.68 by syphilis, 11.90 by chancroids, and 7.28 by other diseases of this class. The average duration of the cases was 27.0 days—43.2 for syphilis, 26.08 for chancroids, 24.3 for other cases, and 22.0 for gonorrhea. The relative prevalence was greatest among the Indians, and much less among the negroes than among the whites, the latter being a fact, seldom, if ever, noted before this year. Fifty-three men were discharged for disability on account of these diseases—44 whites, 5 Indians, and 4 negroes.

Columbus barracks, Ohio, had the highest admission rate, 333.88, much higher than that of the previous year, 292.72, and a noneffective rate of 24.08, as compared with 18.54. The other depots for recruits compare very favorably with Columbus barracks in this respect, Davids Island with 66.53 admissions and 2.78 noneffectives, and Jefferson barracks with 51.66 and 1.91. Forts Brown, Ringgold, and McIntosh, Tex., and Jackson barracks, La., had each an admission rate of more than 200, and Washington barracks, D. C., Fort Clark, Tex., St. Francis barracks, Fla., Mount Vernon barracks, Ala., and Fort Thomas, Ky., had each more than double the average rate of the Army.

In discussing the prevalence of venereal diseases it is to be noted that the statistics sometimes fail to include the whole of the cases. Where duty is light soldiers affected with certain forms of disease frequently seek treatment at the hands of some civilian physician to prevent their condition from becoming known to the command. When the garrison at Fort Douglas went into camp for ten days near the post a decided increase of sickness was noted during the period, the exposures and fatigues of camp life telling on the men and bringing out defects and partial disabilities that would not have been manifest in the ordinary course of garrison life. Included in this increase of sickness were eight cases of venereal disease which were in existence prior to the field service, and which would probably not have been reported to the post surgeon but for the changed conditions and more active duties necessitated by camp life. Again, in speaking of the prevalence of venereal diseases at Columbus barracks, the depot surgeon states his opinion that it is no uncommon occurrence for men so diseased to treat themselves or get treatment outside without having their names appear on sick report; and the post surgeon of Fort Brady is confident that not more than 25 per cent of the venereal cases at his post came under his observation.

ALCOHOLISM.

The admission rate for alcoholism has been falling gradually during the past few years: In 1893, 33.97; in 1892, 37.23; in 1891, 40.01; in 1890, 40.73; in 1889, 41.31, and as the average annual rate of the previous decade, 50.50. Table XVII shows the prevalence of alcoholism

at the various posts and its influence on the effective force of the garrisons during the past year. The large posts having the worst record in this respect are Willets Point, N. Y., 170.27; Fort D. A. Russell, Wyo., 84.74; Fort Logan, Colo., 64.06. West Point, N. Y., has the best record, 2.61. The recruiting depots had low rates: Jefferson barracks, 4.13; Columbus barracks, 6.39, and Davids Island, 21.53.

RHEUMATIC AFFECTIONS.

The admission rate for rheumatism continued to decline during the past year, 65.84 per thousand of strength, as compared with 71.52 in the previous year, 75.33 in 1891, 83.19 in 1890, and 96.97 as the average annual rate of the previous decade. Of the 65.84 admissions of the past year 4.86 consisted of cases of acute articular rheumatism, 12.22 of subacute and chronic cases, and 48.76 of muscular rheumatism. The average duration of the first was 39.7 days; of the second, 33.8 days; of the last, 11.3 days. The relative prevalence was considerably greater among the colored men than among the whites and the Indians. Of 26 discharges 22 were white, 3 colored, and 1 Indian. Omitting minor posts from consideration the greatest prevalence of rheumatic affections was found at St. Francis barracks, Fla.; Fort Wingate, N. Mex.; Fort Missoula, Mont.; Davids Island, N. Y.; Mount Vernon barracks, Ala., and Fort McKinney, Wyo., showing as heretofore pointed out in these reports that climate has less to do with the prevalence of rheumatism than other influences of a less general character.

PULMONARY CONSUMPTION.

The admission rate for consumption during the past year was 2.85; during 1892 it was 4.34, and during the decade previous to last year 3.28. The rate of the past two years has been increased by the service of Indian troops. In 1892 the rate of admission among the aborigines was 35.62, and last year 20.98, as compared with 3.27 and 2.32 among the whites. A total of 72 cases was taken on sick report—52 whites, 5 colored, and 15 Indians. Out of this number and those carried forward from the previous year 17 died and 44 were discharged. Of the deaths 11 were white, 1 colored, and 5 Indian, and of the discharges 32 were white, 3 colored, and 9 Indian.

PNEUMONIA AND PLEURISY.

Pneumonia also was more prevalent and fatal among the Indians than among the whites. The absolute number of admissions was 108—94 white, 6 negro, 8 Indian; and the deaths 18—16 white and 2 Indian. The discharge of 2 white soldiers has also to be added to the disability occasioned by this disease.

No death nor discharge was charged against pleurisy, although 52 cases were reported—whites 45, negroes 6, and Indian 1.

INJURIES.

The admission rate for injuries, 243.29, differs little from that of the previous year, 254.76, and less from that of the previous decade, 249.10. About one-half of the cases were contusions and sprains, with an average duration on sick report of 8.8 days. Gunshot wounds occasioned only 3.32 of the 243.29 admissions. The total number of these wounds was 84, with 25 deaths and 13 discharges. Drowning caused 21 deaths, fractures 6 deaths and 12 discharges, and rupture 21 discharges.

During the year 22 cases of suicide were reported: Officer, 1; enlisted men, 21. This is equal to a rate of 0.80 per thousand of strength, as compared with 0.82 in 1892 and with 0.69 as the average rate of the years of the previous decade. Six of these cases were in men under 30 years of age, 9 between 30 and 40 years, and 7 over 40 years. Resort was had to gunshot by 16, to poison by 5, to drowning by 1. Alcoholism was reported as the cause in 6 instances; fear of court-martial and despondency each in 3; love troubles, insanity, and temporary mental aberration each in 1, and undetermined in 7.

The statistics of suicide for the seven years, 1887-1893 inclusive, give a total of 134 cases: Officers, 7; enlisted men, 127. Infantry, 64; cavalry, 28; artillery, 15; ordnance, 5; engineers, 2; medical and hospital corps, 7; and others, 13. Under 30 years of age, 51; between 30 and 40, 56; over 40, 27. Gunshot, 97; poison, 26; drowning, 4; throat-cutting, 3; and 1 each severing radial artery, suffocation, strangulation, and crushing by railroad train. In 37 the cause was undetermined. In the others the reported causes were as follows: Insanity, 10; temporary mental aberration, 5; despondency, 12; nervous depression following influenza, 1; weakness of mind, 1; fear of court-martial, 5; charge of theft, 2; failure to obtain promotion, 1; fear of the results of syphilis, 2; alcoholism, 42; tired of living, 1; love troubles, 6; jealousy, 2; domestic troubles, 3; homesickness, 1; distaste for service, 1; financial losses by gambling, 2.

INFLUENCE OF SEASON ON THE SICK RATE.

Notwithstanding the increased prevalence of malarial diseases during the past year the autumnal endemics made no marked impression on the general curve of sickness. The average monthly rate of admission per thousand of strength was 107.42. In January and February the rate was a little below this average, but in March it rose to 125.51, its highest point, falling gradually through April, May, and June to 92.26 in the last mentioned month. In July, August, and September it was a few units higher than the average, but fell in October to 95.01. In November and December it reached, respectively, 113.17 and 114.61.

List of special reports received from medical officers during the calendar year 1893.

MEDICAL REPORTS.

Name.	Rank.	Report.
Arthur, W. H.	Captain and asst. surgeon...	Appendicitis.
Bradley, A. E.	1st lieut. and asst. surgeon..	Epidemic of measles; thermograph accompanying. Pleuro-pneumonia, with thermograph accompanying. Pneumonia presenting unusual features. Chronic bursitis. Thoracic aneurism.
Brown, P. R.	Major and surgeon.....	Smallpox.
Bushnell, G. E.	Captain and asst. surgeon...	Cerebral abscess.
Clendenin, Paul .....	.....do	Scarlet fever. Temporary aphasia.
Davis, W. B. ....	.....do	Texas fever, with thermograph accompanying.
Ewen, C.	Major and surgeon.....	Narcolepsy.
Gibson, J. R. ....	.....do	Cerebral abscess; death and autopsy.
Girard, A. C. ....	.....do	Pneumonia, empyema. Typhoid fever.
Girard, J. B. ....	.....do	Cirrhosis of liver; death and autopsy. Perityphilitic abscess; death and autopsy.
Gorgas, W. C.	Captain and asst. surgeon...	Aneurism of aorta; death and autopsy Perforating gastric ulcer.
Harvey, P. F.	Major and surgeon.....	Special report of a case of obstetrics.
Ireland, M. W.	1st lieut. and asst. surgeon..	Mumps at Fort Apache.
Jarvis, N. S.	Captain and asst. surgeon...	Do. Malarial glycosuria, with thermograph accompanying.

List of special reports received from medical officers, etc.—Continued.

MEDICAL REPORTS—Continued.

Name.	Rank.	Report.
Kean, J. R.	Captain and asst. surgeon...	Sarcocele, left testicle.
Kilbourne, H. S.	Major and surgeon	Texas fever (3) cases, with thermographs accompanying.
Lippincott, Henry .....	.....do	Acute lobar pneumonia.
Macanley, C. N. B.	Captain and asst. surgeon ..	Gonorrheal ophthalmia.
McClellan, Ely	Major and surgeon	Pneumonia.
McElderry, Henry .....	.....do	Remittent fever; thermograph.
Munday, Benjamin	Captain and asst. surgeon ..	Remittent fever; thermograph.
Pilcher, Jas. E. ....	.....do	Pneumonia.
Robinson, S. Q. ....	.....do	Typhomalarial fever; thermograph.
Stark, A. N.	1st lieut. and asst. surgeon.	Malarial fever at Fort Niobrara.
Swift, E. L.	Captain and asst. surgeon ..	Typhoid fever; thermograph.
Tesson, L. S. ....	.....do	Special report on epidemic of dengue, Fort Ringgold.
Tilton, H. R.	Major and surgeon	Hystero-epilepsy.
Torney, G. H.	Captain and asst. surgeon ..	Narcosis during parturition.
Turrill, H. S.	Major and surgeon	Diphtheria at Fort Yates.
Vickery, R. S. ....	.....do	Diphtheria at Fort Yates.
Waters, W. E. ....	.....do	Influenza at Fort Yates.
Wells, G. M.	Capt. and asst. surgeon	Acute phthisis; death and autopsy.
White, R. H.	Major and surgeon	Pneumonia; thermograph.
Wilcox, T. E. ....	.....do	Puerperal convulsions; death.
Winne, C. K. ....	.....do	Cerebro-spinal meningitis; thermograph.
Woodhull, A. A. ....	.....do	Epidemic influenza; thermograph.
Woodruff, C. E.	Captain and asst. surgeon ..	Typhoid fever; thermograph.
Worthington, J. C. ....	.....do	Special report on epidemic of dengue.
		Opium poisoning; two cases.
		Variceloid.
		Poisoning by morphine.
		Acute pneumonia; empyema; death and autopsy.
		Diffuse erysipelas.
		Scarlet fever at Fort Grant.
		Typhoid fever and malarial fever; 89 thermographs.
		Remittent fever; 47 thermographs.
		Epidemic influenza; 23 thermographs.
		Valvular disease of heart; death and autopsy.
		Chronic rheumatism.
		Special report on military food.
		Valvular disease of heart; pneumonia; death and autopsy; thermograph.

SURGICAL REPORTS.

Banister, W. B.	Captain and asst. surgeon ..	Rupture of the liver; run over by a wagon; death and autopsy.
Bradley, A. E.	1st lieut. and asst. surgeon..	Three unusual fractures.
Comegys, E. T.	Captain and asst. surgeon ..	Found drowned; autopsy.
DeWitt, Calvin.	Major and surgeon	Gunshot wound of left chest; death and autopsy.
Girard, A. C. ....	.....do	Traumatic insanity.
Hartsuff, A. ....	.....do	Contracted toes.
Heyle, A. B.	1st lieut. and asst. surgeon ..	Gunshot wound of groin; death and autopsy.
Kean, J. R.	Captain and asst. surgeon ..	Enucleation of right eye.
Kieffer, C. F.	1st lieut. and asst. surgeon..	Wound of the heart; death at the end of three days.
Kilbourne, H. S.	Captain and asst. surgeon ..	Stricture of the urethra.
Lippincott, Henry.	Major and surgeon	Ventricular hemorrhage and acute cerebritis; thrown from a horse.
Lynch, Charles	1st lieut. and asst. surgeon..	Laparotomy.
Mason, C. F. ....	.....do	Fracture of clavicle.
Robinson, S. Q.	Captain and asst. surgeon ..	Dislocation of ankle and fracture of fibula.
Stark, A. N.	1st lieut. and asst. surgeon..	Contusion of left elbow.
Stiles, H. R. ....	.....do	Tuberculosis of the testicle.
Symington, John	Attending surgeon	Removal of loose body from ankle joint.
Tilton, H. R.	Major and surgeon	Gunshot wound of forehead and abdomen, not perforating.
Walters, Fred G.	Hospital steward	Resuscitation from drowning; Sylvester's method.
Worthington, J. C.	Captain and asst. surgeon ..	Fracture of cervical spine.
		Gunshot wound, left lower leg; amputation.
		Contusion from a fall.
		Dislocation of left shoulder.
		Death from freezing.
		Tumor of mammary gland in the male.
		Gunshot wound of head; suicide.

SURGICAL OPERATIONS.

During the year the Medical Department of the Army reported 254 surgical operations, 84 of which were necessitated by injuries and 170 by disease. The number, character, and results of these are shown in the following statement:

Nature of operation.	Disease or injury.	Total.	Recov- ered.	Died.	Remarks.
Removal of tumors		28			
Enucleation	Sebaceous, 12; en- cysted, 6; fatty, 5; fibroid, 4; epi- thelioma, 1.	28	28	.....	Scalp, 3; face, 12; ear, 4; hip, 2; leg, 2; neck, 2; hand, 1; back, 1; breast, 1.
Opening of abscesses		17			
Incision	Cellulitis, 2; caries, 3; perityphlitic, 1; liver, 2; peri- nephritic, 1; bur- sal, 1; ischio-rec- tal, 1; subcutane- ous, 6.	17	17	.....	Abdomen, 4; perineum, 3; ulna, 2; scapula, 1; knee, 1; leg, 1; back, 1; thumb, 1; thigh, 1; neck, 1; forearm, 1.
Operations on the eye		11			
For enucleation		3	3	.....
For sarcoma		1	1	.....
For pterygium		2	2	.....
For ectropion		1	1	.....
For dacryocystitis; slitting of lachrymal duct.		1	1	.....
For glaucoma, iridectomy		1	1	.....
For foreign bodies		2	2	.....
Operations on the ear		1			
For foreign body		1	1	.....
Operations on the nose		1			
For deviated nasal septum		1	1	.....
Operations on the mouth		2			
Removal of tonsils	Tonsillitis	2	2	.....
Operations on the veins		6			
For varicocele		5	5	.....	Ligature.
Ligation of femoral vein	Pistol wound	1	1	.....
Operations on the respira- tory organs		4			
Paracentesis	Pleurisy, 1; empy- ema, 1.	2	2	.....
Tracheotomy	Edema of glottis	1	1	.....
Foreign body		1	1	.....	Sand burr in larynx.
Operations on the digest- ive organs		24			
For fistula in ano		3	3	.....
For fissure of anus		1	1	.....	Incision.
For hemorrhoids		17	17	.....	Incision, 4; ligature, 8; injected with carbolic acid, 2; clamp and cautery, 2; sphincter stretched, 1.
Laparotomy	Obstruction of bowels.	1	.....	1	
Paracentesis	Anasarca	1	1	.....
For irreducible hernia		1	1	.....
Operations on the lymph- atic glands		14			
Removal of glands	Venereal, 6; tuber- cular, 3; adenitis, 1.	10	10	.....
Glands curetted	Venereal, 4	4	4	.....
Operations on the urinary organs		19			
For stricture of urethra:					
Internal urethrotomy	Gonorrhea	7	7	.....
External urethrotomy		1	.....	1	
Dilatation	Gonorrhea	5	5	.....
Meatotomy	Gonorrhea	2	2	.....
Incision	Gonorrhea	3	3	.....
Litholapaxy	Calculus in bladder.	1	1	.....
Operations on the gener- ative organs		21			
For phymosis	Congenital, 6; trau- matic, 2; chancre, 4; gonorrhea, 2.	14	14	.....
Testicles	Disease	3	3	.....	Castration.
Hydrocele	Aspiration	4	4	.....

Nature of operation.	Disease or injury.	Total.	Recov- ered.	Died.	Remarks.
Operations on bones		3			
Removal of portions.....	Fracture, 2; exos- tosis, 1.	3	3	.....	Cranium, 1; tibia and fibula, 1; metatar- sus, 1.
Operations on joints		41			
Reduction of dislocations.....		38	38	.....	Shoulder, 17; elbow, 8; wrist, 3; clavicle, 3; hip joint, 2; ankle, 2; patella, 1; rib, 1; in- step, 1.
Removal of loose bodies.....		3	3	.....	Knee, 2; ankle, 1.
Operations on limbs		32			
Amputation for injury:					
Forearm.....	Injury.....	1	1	.....	Primary.
Fingers.....	Shot, 6; injury, 13; frostbite, 2.	21	21	.....	Primary, 17; second- ary, 4.
Thigh.....	Fracture.....	1	.....	1	Primary.
Leg.....	Shot.....	1	.....	1	Primary.
Feet.....	Frostbite.....	2	2	.....	Secondary.
Toes.....	Injury, 4; frost- bite, 1.	5	5	.....	Primary, 1; secondary, 4.
Amputation for disease:					
Thigh.....	Suppurative arthri- tis kneejoint.	1	1	.....	Secondary.
Operations on muscles and tendons		3			
Tenotomy.....		3	3	.....
Operations on the skin, etc.		27			
Ingrown nails.....		17	17	.....
Removal of nails.....	Injury, 4; disease, 1.	5	5	.....
Skin grafting.....	Ulcer, 1; contusion, 1	2	2	.....
Removal of foreign bodies.....		3	3	.....
Aggregate		254			

Deaths among civilians and their causes are shown in the following table:

Disease.	Adult males.	Adult females.	Children.	Total.
Acute febrile and infectious diseases.....		2	18	20
Enthetic.....			1	1
Constitutional.....		4	12	16
Developmental.....	1	2	12	15
Nervous.....	1	2	6	9
Respiratory.....	4	9	13	26
Circulatory.....		1	1	2
Digestive.....	2	3	7	12
Urinary.....	1	6	2	9
Integumentary.....			1	1
Parturition and results.....		3	1	4
Total from disease.....	9	32	74	115
Total from injury.....	1	1	5	7
Unknown.....	1	1	5	7
Total from all causes.....	11	34	84	129

MARRIAGES AND BIRTHS.

On the reports are noted 36 marriages—6 of officers, 26 of enlisted men, 4 of civilian attaches.

The births reported numbered 487—male, 252; female, 235. One hundred were children of officers; 328 of enlisted men; 59 of civilians. Eighteen Indian children, 11 males and 7 females, born at Mount Vernon barracks, Ala., are included in this total.

SANITARY CONDITION OF MILITARY POSTS.

QUARTERS.

The remarks made in my last annual report concerning the dilapidated condition of the quarters at a number of posts, as at Forts Keogh, Custer, and Yates, Whipple barracks, and San Carlos, continue to be applicable at the present time. At Whipple barracks crumbling foundations, broken ceilings, leaky roofs, with overcrowding and the closing of the ventilators in the ceiling to prevent down drafts, gave rise to many cases of catarrh, sore throat, and febrile malaise, and no doubt increased the predisposition to the typhoid epidemic which prevailed at the post during the year. The miserable accommodations at San Carlos were fully described in my last report. In February of the present year the post surgeon in his sanitary report spoke of the crying necessity for better quarters for the enlisted men; and in March he invited the attention of all concerned to the inconvenience and suffering which fall to the lot of the soldier who is compelled to live in the wooden shacks of this post in which the temperature during the summer reaches an astonishing height. At Fort Grant the barracks are low adobe buildings, entirely inadequate and unsuited for their purpose, with little or no space below the floors, badly ventilated and intolerably hot in summer. The old buildings at Camp Eagle Pass are in exceedingly dilapidated condition. Four of them have been reported by the post quartermaster as unsafe and not worth repairing. The post surgeon refers to the purchase of the site by Government as giving hope of improved quarters at this post, inasmuch as, according to his statement, all recommendations heretofore made have been disapproved because the site was rented.

At all of these posts modern airy and comfortable buildings are imperatively needed if they are to be continued in service.

Defective ventilation is referred to in connection with overcrowding in the dormitories at Fort D. A. Russell. Two small holes cut in the ceiling of each building permit the tainted air to escape into the garret, but as there is only one aperture, closely covered with shutters, in each gable to ventilate the garret, the result is far from satisfactory. This arrangement provides at best only for an imperfect exit of tainted air and nothing for the entrance of fresh air. In each squad room 2 tubular flues should be constructed, extending from the ceiling to above the roof, and 2 fresh-air conduits, opening under the stoves, should be placed beneath the floor. A similar ventilating flue should also be constructed in the room occupied by the officer of the guard. This room is small, and frequent complaints have been made about its close and ill-smelling air.

- During the year overcrowding in the quarters of the enlisted men was noted specially at the recruiting depots at Davids Island and Columbus barracks. At the former the floor space was at one time inadequate, although the height of the barracks gave a fair cubical allowance. The surface barely permitted a passage between the beds, and the expired air of one man was breathed by others before admixture with the general atmosphere of the rooms. At the latter depot some of the beds were so close as to nearly touch, and the large sick reports during the winter months were attributed to this overcrowded condition at a time when the windows could not be left open for free ventilation.

Overcrowding in guardhouses was of more common occurrence; and exception was taken to the building in several instances, as well as to

its excess of occupancy. At Davids Island it was represented as antiquated, dilapidated, dismal, and infested with vermin, giving an average of 600 cubic feet to each prisoner, but ventilated only by narrow shafts partially covered at the top, so that the cubic allowance was of little value in the absence of a free air movement. Unfavorable reports concerning the guardhouse came also from Forts Marcy and Sherman, and the Presidio of San Francisco. At the first mentioned, the maximum occupancy of 10, in November, 1893, reduced the air space of each prisoner to 248 cubic feet; at the second, the average daily occupancy for January, 1894, corresponded with an allowance of 250 cubic feet per man, but the maximum occupancy for the same month reduced the air space to 230 feet. At the last-mentioned post bedbugs have settled in the woodwork of the walls and ceilings so that it is difficult to effect their destruction. Although no overcrowding of the guardhouse was reported from Fort Myer, efforts have been made to have the construction of a new one authorized, as the present building is an old one-story frame structure, dirty and infested with vermin. Efforts have also been made to have a new hospital built at this post, as the present structure is old, poorly arranged, insufficiently heated, and too small for the needs of the garrison. It is probable that both of these desirable improvements will be authorized when the appropriations will admit of the expenditure.

The condition of the officers' quarters at Forts Barrancas and Ringgold is denounced specially in sanitary reports. At the former post they are reported as old, ill-planned, and very uncomfortable; money spent in attempts at their repair is wasted. The second-story rooms at the latter post should be increased to full height, with a well ventilated air space between the ceiling and the roof. The present height of 9 feet in the center, sloping to 4 feet at the sides, renders these rooms intolerable in the summer to those who are obliged to occupy them.

The condition of the post exchange meets with unfavorable comment at Forts Logan and Hamilton. This and the laundry are the only buildings at Fort Logan that are not in excellent sanitary condition. They are old and dilapidated, and were originally intended as temporary frame accommodations during the building of the post. The floor of the exchange is rotten, uneven, and full of cracks. An attempt is made to keep it clean, but the attendants feel that no amount of work will make it look well. At Fort Hamilton exception is taken to the location and condition of the quarters of the noncommissioned staff as well as to the condition of the canteen building.

In my last report I gave some illustrations of the inadequacy of the allowance of fuel at certain Northern posts during the winter months. The past winter does not appear to have been so cold, at least fewer references to the severity of the weather are found in the sanitary reports. Complaints of insufficiency of fuel both for officers and men came, however, from Fort Brady, where it is claimed that the winter allowance should be extended through May and the first half of June, as fires are necessary in the barracks during this period. Otherwise the men will seek resorts where there is plenty of warmth and light, and these resorts are not usually elevating in their influences.

DRAINAGE AND SEWERAGE.

Drainage is referred to in the sanitary reports of only a few posts. A system of tile drainage is needful at Angel Island to dispose of surface and subsoil water and to keep the subfloor spaces of barracks and

quarters dry. At Fort Grant a break in the floor of an artificial lake in front of the officers' quarters was speedily followed by a seepage of water into the cellars of the men's barracks 200 yards distant and on a lower level. This suggests the likelihood of a similar seepage from privy pits in rear of the officers' quarters with a fall of 1 in 20 from the pits to the quarters. The post quartermaster was directed to prepare estimates for water-closets to replace the pits in question. A fault in the drainage system at Fort Brady originated in the inadvertent sinking of the ash pits in the barracks, hospital, and administration building below the level of the drains around the foundation walls. In the spring during the melting of the snow, and in summer after every heavy rainfall, water collects in these pits, and as cinders drop into them the buildings become filled with gas. A seepage through the walls of some of the cellars was also developed. The removal of waste water at Fort Sully is mainly effected by open ditches, which are foul in summer and so frozen in winter that the wastes have to be removed by tubs placed in the wash rooms, the floors of which are constantly damp when the tubs are in use. One of the companies disposes of its waste water by means of a filtering cesspool in the subsoil gravel, which so far has operated successfully. A ditch was dug from the wash room to a point 72 feet in rear, 4 feet deep at the wash room and 7 feet at the other end. Here a pit 7 feet in diameter was sunk until it reached the gravel at a depth of 13 feet. A wooden box, a cube of about 4 feet, was placed in the gravel, the bottom and sides perforated with 1-inch augur holes. This box was braced into position and the space between its sides and the earth partially filled with logs. The box was then half filled with selected gravel, as was the space at its sides. The pipe in the ditch leading to the box is a 6-inch square wooden box, tin-lined on its bottom and sides and the joints soldered. The connection with the wash room is made by a 2-inch iron pipe packed in a wooden box and having a wire screen at the top and bottom to prevent the passage of anything save fluids. The drain is below the frost line; the ditch and pit are closely filled up save for a ventilator from the latter rising 10 feet above the surface. At this post, Fort Sully, request was made for a dry-earth system to replace the privy pits in rear of the officers' and laundress's quarters. These pits are connected with the quarters by a covered shed in which are built cupboards for provisions, ice chests, and other attachments of the kitchen, and the pit odors are recognized not only in the sheds but in the adjoining kitchen and quarters. The pits at Fort DuChesne, fully described in my last report, have been replaced by dry-earth closets. Complaint was made of a cess pit still in use at Eagle Pass, and its closure and replacement by dry-earth boxes, as in general use at the post, was requested. At Boise barracks, on the other hand, there has been a return to the privy pits. The difficulty of obtaining scavenger labor for operating the earth closets, introduced in 1892, caused the post commander to recommend a return to the old system, which was done on the approval of the department commander.

Some correspondence took place during the year on the sewerage system of Fort Bayard, certain defects of which were noted in my last report. The post surgeon urged the construction of an improved system, but on account of the limited water supply and other considerations his views were not sustained by the post commander or medical director, who considered that in the absence of an appropriation sufficient for the construction of a system based on thoroughly scientific and sanitary principles the safest, surest, and most economical plan of protecting the health of the garrison was by a system of dry-earth closets

for excreta, and open drains, well made and cared for, to dispose of liquid waste.

The post surgeon at Key West barracks has, on several occasions, invited attention to remediable faults in the disposal of excreta by the pail system in use at this post. The system is objectionable as insufficient, without daily tendance, for the demands made upon it; and even with the utmost care the floors become saturated and foul-smelling by leakage and other causes. The system in use when this post was garrisoned in former years was a great improvement on the present method. Then wooden troughs, lined with galvanized iron, were used. These, which were as long as the buildings and as wide as the seats, were mounted on wheels and emptied as often as necessary by attaching a mule and drawing them into the sea, when, by an automatic arrangement, the trough was turned down and washed out. But superior to this would be a system of water carriage which could be constructed at small cost. Salt-water tanks, filled by windmill power, would cost little compared with the advantages to be derived; and in view of the equable temperature the whole system of pipes might be laid on the surface.

The post surgeon at Jackson barracks recommended that the present vaults, which are emptied once a month under contract by an excavating company, be disused and a new vault be constructed to be emptied daily into the Mississippi by a steam pump. This proposition was approved by me and referred to the Quartermaster-General of the Army.

Full reports have been filed of the faults of the sewerage system of Whipple barracks. The system consists of a 12-inch main, several 9-inch branches and 4-inch house drains, each of the last having just outside of the houses a running trap with a vertical 4-inch pipe rising a few feet above ground and connected with the drain on the house side of the trap. This vertical pipe is intended for flushing purposes. The faults of the system consist of the absence of any means for ventilating the sewers or soil pipes and the absence of traps on the house fixtures, the only guard between the sewers and the houses being the trap on the house drain.

The condition of the sewerage system at Fort Sill continues as described briefly in my last report. During the present year the post surgeon has given an account in detail of its many defects, as he considered it his imperative duty to urge prompt and radical sanitary improvements, as well in the conscientious discharge of his obligation to those whose physical well-being is intrusted to his care, as to escape the measure of blame that would otherwise attach to him in the event of an epidemic outbreak as the result of the exceedingly insanitary condition of the post. By far the larger portion of the sewage is discharged into a depression in the ravine to the south and southwest of the post, from which it is scarcely practicable to remove it by drainage. The accumulation of sewage at this point has gone on for years until quite a pool has been formed, about 100 yards in length and 15 yards in average width, which in hot weather emits an intolerable odor. Judging from the ground-surface lines, the grade of the sewers in some parts of their course is sufficient, but in others it is evidently not so, being less than 3 inches to the hundred feet, a grade much too scant in the absence of ample and frequent automatic flushing. The alignment is imperfect both in the horizontal and the vertical plane, and in those portions where the grade is least the depressions are so pronounced as practically to form traps, and in some localities to divide the sewer into dead sections. At the head of each branch sewer in rear of the officers'

quarters is a galvanized iron pipe 4 inches in diameter and 10 feet in height, presumably intended for ventilation. No other means seem to have been provided for the admission or withdrawal of air. The branch sewers begin near the buildings with a running trap and a vent on the house side. Over the vent is a wooden hopper into which the wastes from kitchen and baths are discharged. In some instances the hopper is omitted, the pipes entering the vent above the water seal.

Blocking of sewers was specially reported from Fort Wadsworth and Fort Schuyler. At the former post the sewer from the line of officers' quarters and the hospital became clogged by the entrance of willow-tree roots. The sickness on the officers' line has always been excessively high; but there is no evidence that this was caused by sewer air or by the blocking of the pipes. At the latter station the sewer of the old fort, which had been disused for many years, was dug out and put in working condition during the year.

In a special report on the plumbing at Fort Douglas, certain defects, mainly leakages from misuse and neglect rather than the result of faulty construction or inferior materials, were noted and remedied. In this report special attention was invited to quarters vacant on account of the absence on detached service of those holding them. The water in the traps of these quarters had evaporated and the houses were filled with sewer odors. As the quarters at this post are double, neglect of this kind in one set affects the sanitary condition of the adjoining quarters. Similar conditions were referred to in the sanitary reports from Fort Logan.

The imperfect and dangerous character of the sewerage system of Fort Monroe remains as stated in my last annual report.

The construction by the city of San Francisco of a sewer, called the Locust-street sewer, across a part of the reservation of the Presidio has resulted in a nuisance, which has continued for the past eighteen months. The sewage enters a little rivulet which flows over the southern margin of the reservation into a marsh just below the post hospital, where it spreads over the surface. This nuisance should be abated.

WATER SUPPLIES.

The water wagon continues in use at Fort DuChesne and Camp Eagle Pass. The quality of the supply at the fort is excellent as drawn from the Uintah river, but it is liable to be contaminated before use. And similarly at Eagle Pass the strong winds that so often prevail fill the barrels with dust and dirt, and the water, even in those of them that are best protected, becomes coated with a scum of light particles, which does not conduce to pleasure in drinking. The piping of water from the town supply is strongly urged by the medical officer of the camp.

An insufficient supply was reported from a few of the posts. At Fort Hamilton, owing to the growth of settlements in its vicinity, the service main from the Brooklyn waterworks is now too small to give the post an adequate supply. At Jefferson barracks the supply is insufficient, particularly when the control of fire and the various needs of a cavalry post are taken into consideration. Diarrhea and malarial fevers have been attributed to the use of the water. The use of boiled water has been ordered and the drinking of water from the taps prohibited. The post surgeon requested that this prohibition be repeated to the recruits once a week, and that its violation be considered as "conduct to the prejudice of military discipline." At Fort Apache it

has occasionally happened that the well water has proved insufficient. At such times water from the acequia, the former post supply, has been turned into the reservoir, and this has been followed invariably by the appearance of diarrheal cases on the sick report. At Fort Assiniboine, during one week in August, the water supply from Beaver Creek was scanty. At this period water from the creek and from a spring in marshy ground on the creek bottom was delivered by water wagons. It is hoped that an artesian well, now in progress, will afford an abundant supply of wholesome water. The supply of the Presidio of San Francisco became at one time interrupted by a break in the flume carrying the Lobos Creek water. Connection was made around the obstruction by means of a 6-inch pipe. The water of certain springs developed between the post and Fort Point was also turned into the post reservoir. In several sanitary reports mention is made of the possibility of danger to Lobos Creek by the overflow of a pond which receives the outflow of the Lake-street sewer of San Francisco. This pond is only about 180 yards from the creek, and the intervening ground, although at present preventing overflow, does not prevent seepage through the sand. A careful watch has been kept over the quality of the creek water.

At some posts insufficiency of supply has been remedied during the year—at Fort Warren by connecting with the water mains of the Boston city supply through the medium of the supply for Gallups Island. At Fort Grant, where scarcity heretofore has been remedied for the time being by extending the line of piping farther up the canyon, a further extension of 2 miles has been made to a point where the water is assumed to be permanent and in sufficient quantity for a liberal supply. A reservoir and fountain on the parade ground in front of the officers' quarters furnish water for grass and shade trees and demonstrate the sufficiency of the supply.

Improvements have been made at several other posts. From Madison barracks it is reported that the new supply from Henderson Bay was completed in November last, and that there will be no danger in future from contaminated water. Sewage contamination of the former supply from Black River Bay was believed to have been the occasion of a serious outbreak of typhoid fever. Bear Spring, which formerly gave an ample supply to Fort Bowie, but which for two or three years back has been drying up, has recommenced its flow. Since April last the water supply at this post has ceased to occasion anxiety. The effort to procure well water at Mount Vernon barracks proved a failure. A new reservoir, well protected and ventilated, has been built for the spring water. The hydraulic ram has been replaced by a steam pumping engine, by which the water is raised to an iron tank of 36,000 gallons capacity on the summit of the hill occupied by the buildings of the garrison. This tank is elevated 50 feet from the ground and 150 above the level of the pumping station. From this the water is conducted by 4-inch mains to the barrack rooms, kitchens, officers' and noncommissioned staff quarters, and the men's water-closets and bath rooms; also to the barracks of the Indian company and to hydrants in the camp of the Indian prisoners. Samples of the water examined in the laboratory of this office were found to be of excellent quality. At Fort Niobrara a new tank, having a capacity of 60,000 gallons, has been built. This, with some additional piping, has permitted the men's closets to be utilized. These were formerly closed on account of want of water. On several occasions during the rains of April the spring at Fort Clark was flooded with surface water. A wall has been built

between the arroyo and spring for the protection of the latter. The facilities for providing distilled water have been increased, and it is hoped that the use of this water for drinking purposes will lessen the prevalence of fever at this post during the coming autumnal season. The question of a water supply at Fort Reno remains unsettled. The causation of fever cases by the river supply is so well recognized that the hydrants around the post are placarded "Poison," to warn recruits and inexperienced persons from using this supply for drinking. Caddo Spring water was kept in tanks and barrels in the company quarters; and when this supply failed on account of the increased needs of the Indians' school the barrels were kept filled with distilled water from the ice machine. As the sale of ice decreased after September so that the machine could not be run steadily enough to supply the post with drinking water, the post surgeon requested an allowance of 30 cords of wood per month and extra-duty pay for one man to enable him to continue the distillations. This was referred to the Quartermaster-General of the Army, approving the suggestion, as under the conditions existing at Fort Reno the condensed water from the ice machine was in a sanitary sense the most valuable part of the water supply of the post. Meanwhile, work on the artesian well was abandoned and a driven well was sunk in the river bottom about 300 yards from the stream. From this well 45 gallons per minute have been pumped with no apparent diminution of the supply. The water was reported cool and clear, but hard. On analysis it was found to be pure organically, but was pronounced too hard for potable use, containing 125 parts of mineral matter per 100,000 parts of water (73 grains per gallon), chiefly bicarbonates, sulphates, and chlorides of lime and magnesia; in fact, a mineral water. The water question at Fort Stanton appears now to have been solved by the sinking of a well about 285 feet deep. In the report for June last it was stated that although the Rio Bonito had been quite dry for two weeks the supply of excellent water from the well had been ample for all purposes.

The water supply of Fort Myer, briefly described in my last report, has been improved during the year by the sinking of an artesian well. The sanitary report for June stated that no change had taken place in the water question, but that the new well, which is claimed by the contractor to fill all requirements as to quality and quantity of water, will in all probability be reported upon soon by an officer detailed by the War Department for that purpose.

Suggestions were made by the medical officers of a few posts for the improvement of their water supplies. The post surgeon at Fort Sheridan urged the extension of the intake farther into the lake to avoid blocking by slush ice in winter and turbidity during northeast storms. During the past year several temporary stoppages were reported and the water was sometimes unfit for use after severe storms. The condition of the water supply at Fort Meade remains unchanged. From the hardness of the spring water I was formerly of the opinion that the supply came from the high grounds on the north side of the creek, but a personal inspection has led me to believe that the springs are fed by filtration from the creek. Although the water is apparently untainted by the sewage of Sturgis, its hardness makes it undesirable for a post supply. A good soft water would be preferable; but from a sanitary point of view the question of a new water supply for this post is not an urgent one. At Fort Canby the water supply of the post consists of surface drainage collected behind dams in the ravines, the permanence of the supply during the summer being assisted by two or three

springs of subsoil water. From the dams the water is carried through pipes by gravity to a cistern at the engine house and from there it is forced into a reservoir of 50,000 gallons capacity at an elevation of 100 feet in rear of the commanding officer's quarters. This reservoir supplies the officers' quarters and all buildings north of and including the post hospital. From two dams in rear of the barracks the water falls by gravity, filling two connected tanks of about 10,000 gallons total capacity, any excess of supply being conducted to the cistern at the engine house. From these two tanks all buildings south of the post hospital are supplied, but as their elevation does not exceed 30 feet, the pressure and flow of water from jets and faucets is low and unsatisfactory. In rear of four sets of the officers' quarters and of the old and new hospitals are brick cisterns, each of about 4,000 gallons capacity, which collect the roof water and retain it for drinking purposes. This supply, though it may fail before the end of summer, is measurably pure and satisfactory as far as the officers are concerned. Three sets of officers' quarters are without cisterns. On the contrary, the supply of water to the enlisted men is the surface drainage and subsoil water before mentioned, which, though abundant during the rainy season, is inferior in quality, and during the dry season has been deficient in both quality and quantity. Plans and specifications were submitted one year ago by the post quartermaster for the improvement of the water supply at this post by the collection of rain water from the roofs of a number of the larger buildings at the post and its storage in one large reservoir in rear of the quarters of the commanding officer—the entire post to be supplied with water from the latter reservoir by gravity. Favorable action was not taken on this proposition.

FOOD AND COOKING.

Considering the large number of posts from which reports are received regularly covering the subjects of food and its cooking, the small number of references to deficiency or inferior quality of the articles of the ration or to faults in their preparation demonstrates the amount of care and attention given to these matters by the officers responsible.

From several posts, such as Forts Supply, Reno, and Sill, fresh beef was reported at certain seasons as dry, lean, tough, and with an excessive proportion of bone. So long as beef contracts are awarded for so long a period as a year, and at a price which prevents the contractor from supplying any other beef than that from the neighboring ranges, poor beef is to be expected with every failure of the local pastures. The post surgeon at Fort Sill considers that a bid under 3½ cents per pound for the year means that the bidder intends to procure his beef from the local ranges. As the pastures in the vicinity of Fort Sill are usually excellent during the summer and autumn he recommended that contracts be let to cover two periods, one from May to December, the other for the remaining months of the year. For the one period the contracts could be made with a view to accepting the range-fatted beeves, and the expectation of getting beef of satisfactory quality would be not unreasonable. For the other period the stipulation should be explicit for corn-fed beef or its equivalent in grade. This suggestion was regarded favorably by the post commander.

The post surgeons at Fort Wadsworth and Key West barracks also reported the fresh beef as of inferior quality. At the one post the cooks of the various organizations complained of it as being tough and having too much waste. At the other the medical director character-

ized it as poor, tough, and foul smelling, the post surgeon explaining this by the statement that beef cattle are frequently many days in transportation from the place of purchase on the mainland and arrive at their destination in a feverish state and unfit for food. He suggested that beef purchased in New York be forwarded in refrigerators by the Mallory Line of steamers, which touch at Key West once a week en route to Galveston, Tex. At Fort Thomas, also, the beef for a short time was reported as being excessively tough and of a quality inferior to that ordinarily furnished by the contractor.

The cooking of the meat as conducted at the last-mentioned post, by steam heat, was unfavorably criticised by the medical director. He reported the vegetables as well cooked, but the meat as insipid, the juices being extracted and the tasteless fiber becoming tougher by the steaming, as in the method by the "Warren Cooker." Meat should be subjected to a high temperature early in the process of cooking, and the steam range does not afford the requisite temperature. The method of cooking the fresh-meat ration came under discussion at West Point also. The post surgeon considered that the method of baking failed to preserve the flavor and juices of the meat. The meats were subjected to heat in deep, close vessels, giving cuts that were either dry and overdone or greasy. He claimed that the best results were obtained by cooking in a pan in a hot oven and basting carefully until done. According to the post quartermaster, this method of pan roasting had been employed at the post until about two years ago, when deep copper vessels, tin lined and closely covered, were procured. Since then the meats had been cooked in these vessels, with an occasional change to the open-pan method for the sake of variety. When treated in the close vessels the juices and flavor thrown off are retained in the vessel and condensed on the meat so as to baste it regularly. The cuts obtained by this manner of cooking he found to be in no instance dry or burned, such a result being impossible, as a moisture pervades the vessel during the whole process of cooking. The degree to which the meats are cooked depends upon the liking of the cadets. To suit the taste of those who desire their meats well done, some of the roasts are subjected to a dry heat after having been pot-roasted as stated. As a rule, the pot roasts are preferred to the pan roasts.

Post messes, as compared with company cooking, are referred to in only one report—from Fort McPherson—where, on the institution of a post mess, the port surgeon gave it as his opinion that, with competent cooks, this system is a great improvement on the old one of company messing. Inspection of the food, cooking, police of the mess hall, etc., are made easier, and faults are more readily detected and corrected.

At Fort Columbus several cases of acute diarrhea among the prisoners were referred by the post surgeon to fermented hash. The outbreak occurred about the time that new potatoes were issued to the command, and some persons attributed it to their use; but as the disease was confined to the prisoners, it is reasonable to suppose that the cause was a local one.

At Fort Thomas the bread was reported of inferior quality on several occasions, and at Forts Apache and Columbus and Washington barracks a similar inferiority of the bread was referred to the poor quality of the flour. At Fort Apache a civilian baker was imported from Los Angeles, but he failed to get better bread than was furnished by the post baker. The civilian certified that the post baker understood his business thoroughly, and had excellent yeast. The fault was

therefor concluded to lie in the flour. At Fort Columbus an examination of some samples of flour was made, but the percentage of gluten was not determined. At Washington barracks the bread, which was tough, heavy, and dark-colored, became of good quality when a better brand of flour was issued.

Complaint was made on two occasions of the California potatoes issued at Fort Marcy. They were found to be pervaded with dark-colored spots. Colorado potatoes, subsequently issued, were of excellent quality.

Coffee was the only other article of diet reported against, and this only in two instances. At Fort Yellowstone several hundred pounds of a low-grade article were received, and one issue was made therefrom; but the acting commissary of subsistence, on recognizing the quality, recalled the unused portion of the issue, and submitted the entire quantity of the invoice, as well as another of similar quality, for the action of a board of survey. At Fort Brady the samples complained of contained 15.6 per cent of black, worm-eaten, and moldy kernels. Even when picked over the coffee when prepared was so weak and musty as to be unfit for use. It, also, was submitted to the action of a board.

CLOTHING.

During the year many reports were received concerning the unsatisfactory character of the shoes issued to the troops. At Fort Marcy the men wore these shoes only when on strictly military duty; they were regarded as heavy, ill-fitting, and too stiff and hard in the uppers. At Fort Supply the same criticism was made: If worn occasionally, chafing of the feet, and if worn constantly, corns on the toes and soles were developed in consequence. The post surgeon at Fort Washakie had many men undergoing treatment for corns, bunions, and ingrowing toe nails due to the use of the issued shoes. Similar cases occurred at Fort Barrancas, where the post commander in an indorsement stated that the complaints of the men were very general and on the line taken by the post surgeon. At Fort Keogh the shoes were characterized as too heavy, stiff, and unyielding. The average weight of a pair is 3 pounds; they embarrass their wearers in running, frequently excoriating and blistering the feet, and in consequence the men avoided wearing them whenever they could do so.

Later in the year a new style of shoe was issued which is reported as having given better satisfaction than that formerly provided. The post surgeon at Fort Supply states, however, that the canvas lining is so large as to permit of wrinkling, and that the wrinkles chafe the foot. Unfavorable remarks came also from St. Francis barracks to the effect that many of the new calfskin shoes broke in the uppers before the sole was appreciably worn, and that the leather in some instances could be easily torn with the fingers.

The military cadets during their summer encampment and when on duty at the World's Columbian Exposition suffered considerably from blistered and chafed feet. The return of sick and wounded from July 15 to August 31 shows 71 different cadets to have been admitted to hospital or to have been excused from some part of their military duties by reason of ill-fitting shoes. It is not clear, however, that the uniform shoe was wholly in fault in these instances. The cadet uniform shoe was recommended in 1888 by a board of officers consisting of Lieut. Col. H. S. Hawkins, commandant of cadets; Maj. Charles H. Alden, surgeon, and Lieut. E. D. Smith, Nineteenth Infantry, after a

most careful and thorough investigation of the subject. The cadets as a rule prefer close-fitting shoes, and it is possible that they may have selected them too short and too narrow. If so, the matter is one which can be remedied by the inspector of clothing, who passes on all shoes issued. Besides, the cadets wear ununiform shoes generally of a light grade. These shoes are not permitted to be worn on guard, drill, or other military exercises, but they may have caused disability by being worn at other times.

Exception was taken to the underclothing for summer wear at Key West barracks and as far north as Davids Island. As conducive to the health and comfort of the men, the attending physician at the first-mentioned post renewed his earnest request, as given in my last annual report, for "feather-weight" all wool undershirts and drawers. If these are not provided the men purchase for themselves cheap gauze stuffs which do not prevent rapid evaporation when perspiring, and consequently tend to induce those diseases that arise from chilling of the surface. At Davids Island the coarse woollen shirt and cotton-flannel drawers in use indiscriminately, summer and winter, are incompatible with a temperature of 80-95° F.

On the other hand, at Fort Brady and Madison barracks the issue of cotton flannel drawers is regarded as altogether wrong, for winter wear especially. A man marching his tour of guard duty exposed to a temperature of 30° below zero, or what is worse, facing a wind from Lake Superior, needs all the protection that warm clothing can give him.

The adoption of a white uniform for troops serving in warm latitudes is regarded as having contributed to the health and comfort of the men. The post surgeons at Forts Sill and Barrancas speak strongly in favor of this uniform during the heated months.

HABITS, CLEANLINESS, ATHLETIC EXERCISES, ETC.

The reports of medical officers regarding the habits of the men are generally favorable. At some posts where houses of bad repute are established in the vicinity, the sick report often becomes burdened with the results of dissipation, particularly after pay day. The unfortunate exposure of the recruits at Columbus barracks to harmful influences of this kind has already on several occasions been pointed out. The depot surgeon in his report for October remarked that venereal diseases continued to be the principal ailment of those on sick report. On the morning on which he wrote he had 24 such cases in hospital, with only 20 cases of all other diseases in hospital and in quarters combined. This is in part due to the environment of the recruits. As an offset to reports of this kind there are others, such as that from Fort Yellowstone, which say that a reading and debating club has been organized, and that the initial purchase of books has been made, there being no post library or reading room. The statements of prevalence of venereal diseases and alcoholism, on page 58, *supra*, show that if any change has taken place in the habits of the men it has been rather of a desirable character than otherwise.

The post exchange has seldom been mentioned in the sanitary reports. At Fort Thomas the infrequency of drunkenness was attributed to the difficulty experienced in obtaining intoxicants anywhere except at the exchange, for on the establishment of some drinking saloons near the post an increased prevalence of alcoholism was speedily manifested. The post surgeon at Fort Brady reported against the location of the

exchange at his post. He represented it as housed in one end of a building intended for shops, its appointments crude in the extreme, and its brick walls unplastered. As men are influenced to a great extent by their surroundings, he considered that any improvement in the situation and appointments of the exchange would have a corresponding beneficial effect on the habits of the men.

Some remarks were made in my last annual report concerning the dissipated and unclean habits of the Indian companies. I am gratified this year to be able to cite Col. Irwin's commendation of the company stationed at Fort Sill: "Camp of Troop L, Seventh Cavalry, Indian, with some 40 families, in admirable police. Never saw better, especially when it is remembered that the command has been on this site for more than two years."

Several references to inadequate facilities for bathing have been noted, but none charging any command or part of a command with lack of personal cleanliness. Inadequate provision is reported from Forts Canby and Washakie, Key West and St. Francis barracks, and from San Carlos. Camp Eagle Pass, however, has the poorest equipment of this kind. The bath house is a tent in an arroyo, and the water is heated in an old can over an open fire out of doors. In spite of these difficulties the men bathe and are above the average in cleanliness.

In my last report I referred to the very general call made by medical officers for the fitting up of rooms for athletic exercises. The benefit accruing from systematic work in a gymnasium is acknowledged by all. Capt. Paul Clendennin makes a strong plea in behalf of a gymnasium at Fort Brady, and as many of his arguments are equally applicable to the general question, I submit his remarks:

I desire again to invite your attention to the necessity of a suitable gymnasium and amusement room at this post. The men are shut up from early in November until May, the severe weather and the heavy snowfalls preventing their drilling or taking out-of-door exercise to any extent. It is needless for me to go into any extended argument to show the self-evident fact that such a state of affairs must be detrimental both physically and mentally. That such is the case is well shown by a glance at the report of the medical director, showing this post at the head of the department in alcoholism and well to the front in venereal, although I dare say not 25 per cent of the latter ever comes under the observation of the surgeon.

In the development of the young man from the raw recruit to the well set up soldier physical trainings should go on *pari passu* with the drill. Of what utility is all a soldier's knowledge of drill, provided he is unable to march? Or of what avail that he is a sharpshooter if his wind is so poor that he is all of a tremor when he comes within reach of the enemy from the exertion of reaching that position? Or of what profit is his courage and skill if in charging he meets with obstacles he can not surmount or ditches he can not cross, or if, having overcome these difficulties, he reaches the time for the supreme effort in an exhausted condition? A soldier should be an all-round athlete and be able to run, jump, climb, and even swim with his arms and ammunition on his person. This can only be effected as the result of painstaking training. To be sure, the drill itself is exercise, and has an excellent effect on the men; and in the South, where out-of-door drill is possible during most if not all of the year, excellent results may be obtained; but in the North, where the men are shut up indoors the greater part of the time, not much can be expected. After a man's short period of enlistment has terminated he should be returned to the community in a better condition physically than when he entered the service. A man who has been a soldier should retain during life the erect and elastic carriage of the well set up soldier. This carriage is attained in part by the setting-up drill, by pride in appearance, and a desire to look well, but chiefly by regular gymnastic exercise. Then, too, consideration should be had for the health of the men and the good effect of regular exercise upon this as well as the prevention of disease by the increased robustness due to exercise and consequent increased physical development. Viewed from the moral point a gymnasium and amusement room would be a great boon to the men, providing them with a place of resort and recreation which, it is to be hoped, will prove more attractive than the evil resorts of the adjacent town. I have no doubt that many a spree of the men is due to the necessity of working off an excess of animal spirits. If, as I feel sure it would, the

gymnasium should prove attractive to the men, the effect on their morals and habits, and consequently on the prevalence of certain diseases at this post, would be marked. The advantages of physical training and the attractions of a gymnasium and amusement room seem to me so great that the expenditure of a few thousand dollars would be more than justified. Here is a post that cost \$250,000, built for the accommodation of four companies of infantry, in a latitude having seven months of winter, with no provision whatever for the physical education of the men or suitable means for their exercise, excepting a drill hall over the mess room and the opportunity to shovel snow all winter. This, I maintain, is altogether wrong and should be remedied.

The post commander concurred fully in these views and reported to the post surgeon that plans would be prepared for a suitable building to be used as a gymnasium, practice gallery, drill hall, and post exchange.

APPENDED PAPERS.

Appended are certain statistical tables which give in detail the data on which the statements of this report are based. They are:

I. A numerical view of the effects of disease and injury on the Army during the calendar year 1893, as compared with the corresponding data of the year 1892 and of the decade ending December 31, 1891.

II. The relative sickness of the troops (white, colored, and Indian) in the various military departments.

III. The military posts in each department, alphabetically arranged, with mean strength, admissions for disease and injury; also, deaths and discharges, with ratios per thousand of strength for admissions and noneffectiveness, the averages of daily sickness, and the meteorological data for the year 1893.

IV. A general view of the results of disease and injury at each of the various military stations, arranged in the order of their mean strength.

V. Twenty posts having the highest rates of admission for the year; the said rates compared with those of 1888-1892, inclusive.

VI. Twenty posts having the lowest rates of admission.

VII. Twenty posts having the highest rates of noneffectiveness during the year; the said rates compared with those of 1888-1892, inclusive.

VIII. Twenty posts having the lowest noneffective rates.

IX. Twenty posts having the highest admission rates for disease, excluding venereal diseases, vaccina, and alcoholism, together with their ratios for deaths, discharges, and constant noneffectiveness; also the corresponding average rates of the Army.

X. Twenty posts having the highest noneffective rates for disease, excluding venereal diseases, vaccina, and alcoholism, together with the average number sick daily, and average duration of each case; also the corresponding average rates of the Army.

XI. The military posts in each department, showing the rates of admission, death, discharge, and noneffectiveness for disease, not including venereal diseases, vaccina, nor alcoholism.

XII. The monthly prevalence of disease among the white, colored, and Indian troops of the Army.

XIII. The rates per thousand of strength of admission, death, discharge, and noneffectiveness of the Army and of the troops in the several departments for the year, as compared with those of the decade 1882-'91.

XIV. Admission rates for specific febrile diseases.

XV. Distribution of specific febrile diseases at U. S. military posts during the year.

XVI. Twenty posts giving the largest admission rates for malarial diseases, rheumatism, diarrheal and venereal diseases, respectively.

XVII. Twenty posts giving the highest noneffective rates for malarial diseases, rheumatism, diarrheal and venereal diseases, respectively.

XVIII. The prevalence of alcoholism at the various posts, and its influence on the effective force of the garrisons.

XIX. Number of applicants for enlistment examined during the year, with the number accepted, rejected on primary examination, and declined; also ratios per thousand examined.

XX. Causes of rejection among 20,332 recruits examined, with corresponding rates per thousand of each race examined.

XXI. Nativity of accepted recruits.

XXII. Average height, weight, and chest measurements of accepted recruits.

Respectfully submitted.

GEO. M. STERNBERG,
Surgeon-General.

Hon. DANIEL S. LAMONT,
Secretary of War.

APPENDED PAPERS.

STATISTICAL TABLES.

TABLE I.—A numerical view of the effects of disease and injury on the Army during the calendar year 1893, as compared with the corresponding data for 1892 and for the decade 1882-1891.

United States Army.	White.	Negro.	Indian.	Total.
Average strength as shown by returns of the Adjutant-General.....	* 24,567	* 2,360	* 732	* 27,659
as shown by reports of the Medical Department.....	† 22,429	† 2,143	† 715	† 25,287
All admissions to sick report during the year.....	29,488	2,385	723	32,596
treated in hospital.....	15,800	1,452	360	17,612
treated in quarters.....	13,048	860	358	14,266
treated in field.....	640	73	5	718
Ratios of all admissions per 1,000 of mean strength....	1,314.73	1,112.93	1,011.19	1,289.04
for the previous year.....	1,273.45	1,257.86	1,216.44	1,270.42
for the preceding decade.....	1,405.17	1,600.00	.....	1,424.20
Admissions for disease.....	24,145	1,825	531	26,501
ratios per 1,000 of mean strength.	1,076.51	851.01	742.66	1,048.01
for the previous year.....	1,026.78	960.11	894.52	1,017.68
for the preceding decade.....	1,161.88	1,297.60	.....	1,175.10
Admissions for injury.....	5,343	560	192	6,095
ratios per 1,000 of mean strength.	238.22	261.32	268.53	241.03
for the previous year.....	246.68	291.75	321.02	252.74
for the preceding decade.....	243.29	302.92	.....	249.10
Ratios per 1,000 of mean strength of cases treated in hospital.....	704.45	677.56	503.50	606.48
of cases treated in quarters.....	581.74	401.31	500.70	564.16
of cases treated in field.....	28.53	34.06	6.99	28.30
Number constantly noneffective during the year.....	921.65	68.60	25.12	1,015.37
ratios per 1,000 of mean strength.....	41.09	32.01	35.13	40.15
ratios for the previous year.....	39.63	38.55	39.97	39.60
ratios for the preceding decade.....	43.03	44.26	.....	43.16
Number of days lost on account of sickness during the year.....	336,401	25,040	9,168	370,609
average for each man of the Army.....	15.0	11.7	12.8	14.7
for the previous year.....	14.5	14.1	14.6	14.5
for the preceding decade.....	18.5	16.2	.....	15.8
Average number of days each case was treated.....	11.4	10.5	12.7	11.4
for the previous year.....	11.4	11.2	12.0	11.4
for the preceding decade.....	13.2	10.1	.....	11.1
Average days treatment for patients discharged for disability.....	77.6	83.7	48.5	76.7
who died.....	26.0	29.7	23.8	26.2
Number of discharges for disability.....	368	24	21	413
ratios per 1,000 of mean strength.	14.98	10.17	28.69	14.93
for the previous year.....	18.20	14.54	31.93	18.35
for the preceding decade.....	28.85	28.86	.....	28.82
Number of discharges for disease.....	304	18	20	342
ratios per 1,000 of mean strength..	12.37	7.63	27.32	12.36
for the previous year.....	16.04	13.63	28.69	16.20
for the preceding decade.....	24.25	24.04	.....	24.21
Number of discharges for injury.....	64	6	1	71
ratios per 1,000 of mean strength..	2.61	2.54	1.37	2.57
for the previous year.....	2.22	.91	3.83	2.16
for the preceding decade.....	4.59	4.82	.....	4.61
Number of deaths from all causes.....	162	18	11	191
ratios per 1,000 of mean strength.....	6.59	7.63	15.03	6.91
for the previous year.....	6.11	5.00	20.43	6.44
for the preceding decade.....	8.39	9.69	.....	8.51
Number of deaths from disease.....	93	11	7	111
ratios per 1,000 of mean strength.....	3.79	4.66	9.56	4.01
for the previous year.....	4.23	3.18	11.49	4.36
for the preceding decade.....	5.53	6.90	.....	5.65
Number of deaths from injury.....	69	7	4	80
ratios per 1,000 of mean strength.....	2.81	2.97	5.46	2.89
for the previous year.....	1.88	1.82	8.94	2.08
for the preceding decade.....	2.86	2.79	.....	2.86

* Used in computing the ratios of deaths and discharges for the whole Army.

† Used in computing all ratios for the Army except those of deaths and discharges.

TABLE II.—The relative sickness among the troops, white, negro, and Indian, in the various military departments during the year 1893.

Army, by departments.		Mean strength of command.	Admissions.						Admission rate per 1,000 of mean strength.	Troops per 1,000 of mean strength constantly non-effective from sickness.
			Quarters.	Hospital.	Field.	Disease.	Injury.	Total.		
East.....	W..	6,723	4,716	5,491	8	8,692	1,523	10,215	1,519.41	43.25
	N..	132	112	127	.....	193	46	239	1,810.61	49.23
	I..	89	52	61	.....	76	37	113	1,269.66	41.65
Missouri.....	T..	6,944	4,880	5,679	8	8,961	1,606	10,567	1,521.74	43.34
	W..	4,009	2,280	3,058	155	4,415	1,078	5,493	1,370.16	40.53
	N..	103	50	120	.....	126	44	170	1,650.49	54.24
Dakota	I..	57	51	25	.....	63	13	70	1,333.33	62.87
	T..	4,169	2,381	3,203	155	4,604	1,135	5,739	1,376.59	41.17
	W..	2,376	1,395	1,315	91	2,183	618	2,801	1,178.87	37.99
Platte	N..	937	240	606	61	682	225	907	967.98	28.85
	I..	192	58	62	.....	87	33	120	625.00	30.78
	T..	3,505	1,693	1,982	152	2,952	876	3,828	1,092.15	35.09
Texas.....	W..	2,074	1,112	1,316	26	1,980	474	2,454	1,183.22	36.41
	N..	405	213	318	1	387	145	532	1,313.58	28.76
	I..	186	70	84	.....	116	38	154	827.96	22.39
Colorado.....	T..	2,665	1,395	1,718	27	2,483	657	3,140	1,178.24	34.26
	W..	1,733	1,210	1,362	164	2,332	404	2,736	1,578.76	53.97
	N..	1,733	1,210	1,362	164	2,332	404	2,736	1,578.76	53.97
California	T..	2,722	1,470	1,782	108	2,691	669	3,360	1,234.39	37.96
	W..	562	243	278	11	432	100	532	946.62	28.13
	N..	174	114	106	5	160	65	225	1,293.10	27.70
Columbia.....	I..	3,458	1,827	2,166	124	3,283	834	4,117	1,190.57	36.29
	W..	1,390	416	887	53	1,034	322	1,356	975.54	34.51
	N..	1,390	416	887	53	1,034	322	1,356	975.54	34.51
Hot Springs, Ark...	T..	1,365	448	572	35	801	254	1,055	772.89	23.94
	W..	17	13	22	.....	29	6	35	2,058.82	84.29
	N..	1,382	461	594	35	830	260	1,090	788.71	24.68
At large:	T..	37	1	17	.....	17	1	18	486.49	.....
	W..	4	2	3	.....	5	.....	5	1,250.00	.....
	N..	41	3	20	.....	22	1	23	560.98	.....
Miscellaneous deaths and discharges.										
Total for the Army.	W..	22,429	13,048	15,800	640	24,145	5,343	29,488	1,314.73	41.09
	N..	2,143	860	1,452	73	1,825	560	2,385	1,112.93	32.01
	I..	715	358	360	5	531	192	723	1,011.19	35.13
	T..	25,287	14,266	17,612	718	26,501	6,095	32,596	1,289.04	40.15

TABLE II.—The relative sickness among the troops, white, negro, and Indian, in the various military departments during the year 1893.—Continued.

Army, by department.		Deaths.	Annual death rate per 1,000 of mean strength.	Discharges for disability.	Annual discharge rate per 1,000 of mean strength.	Average duration of treatment among patients.		Death rate per 1,000 of admissions.	Discharge rate per 1,000 of admissions.		
						Who died.	Who were discharged for disability.				
East	W..	46	6.64	90	13.39	25.17	60.11	4.50	8.81	967.11	299.76
	N..	2	15.15	2	15.15	7.00	93.50	8.37	8.37	962.34	6.50
	I..	3	83.71	1	11.24	52.67	39.00	26.55	8.85	938.05	3.71
	T..	51	7.34	93	13.39	26.08	60.51	4.83	8.80	966.69	900.97
Missouri	W..	25	6.24	61	15.21	14.28	77.24	4.55	11.10	958.85	162.48
	N..			1	9.71		222.00		5.88	994.10	5.59
	I..	2	35.09	5	87.72	13.50	76.40	26.81	65.79	855.26	8.58
	T..	37	8.48	67	16.07	14.22	79.45	4.70	11.67	959.38	171.66
Dakota	W..	15	6.31	40	16.63	22.27	97.62	5.36	14.28	964.80	90.05
	N..	6	6.40	11	11.74	50.17	72.55	6.61	12.13	968.00	27.03
	I..	4	20.83	8	41.67	4.50	34.87	33.33	66.67	925.00	5.91
	T..	25	7.13	59	16.83	26.12	84.61	6.53	15.41	963.96	122.99
Platte	W..	17	8.20	20	9.04	44.88	108.25	6.93	8.11	964.55	75.52
	N..	3	7.41	1	2.47	30.33	38.00	5.64	1.88	964.29	11.65
	I..	2	10.75	2	10.75	29.50	80.60	12.99	12.99	963.50	4.15
	T..	22	8.26	23	8.63	41.50	96.48	7.01	7.32	965.92	91.33
Texas	W..	20	11.54	28	16.16	26.10	90.79	7.31	10.23	966.01	93.53
	N..	20	11.54	28	16.16	26.10	90.79	7.31	10.23	966.01	93.53
	I..	15	5.51	43	15.80	21.47	79.82	4.48	12.90	968.63	103.34
	T..	7	12.45	6	10.67	18.14	97.88	13.16	11.28	964.29	15.81
Colorado	W..			4	22.99		43.75		17.78	995.50	6.34
	N..	22	6.26	53	15.33	20.45	79.13	5.34	12.67	961.62	125.49
	I..	11	7.91	28	20.14	56.27	62.00	8.11	20.65	966.49	47.97
	T..	11	7.91	28	20.14	56.27	62.00	8.11	20.65	966.49	47.97
Columbia	W..	8	5.36	18	13.19	7.87	51.61	7.58	17.06	968.29	32.68
	N..			1	58.82		83.00		23.57	942.86	1.43
	I..	8	5.79	19	13.75	7.87	53.28	7.84	17.43	967.80	34.11
	T..	3		16		49.00	232.44				25.31
Hot Springs, Ark. .	W..			1			289.00				2.03
	N..										
	I..	2		17		49.00	235.76				37.34
	T..										
At large: Miscellaneous deaths and dis- charges.	W..	3		24							
	N..			2							
	I..	3		26							
	T..										
Total for the Army.	W..	162	6.59	388	14.96	25.99	77.56	5.53	12.48	964.67	921.66
	N..	18	7.68	24	10.17	29.66	88.66	7.55	10.06	970.23	68.80
	I..	11	15.03	21	28.69	33.62	48.52	15.21	29.04	958.50	25.12
	T..	191	6.91	413	14.98	26.31	78.73	5.89	12.67	964.94	1,015.37

TABLE III.—Military posts in each department, alphabetically arranged, with mean strength, admissions for disease and injury, also deaths and discharges with ratios per thousand of strength for admissions, and noneffectiveness, the averages of daily sickness and meteorological data for 1893.

DEPARTMENT OF THE EAST.

Name of station.	Mean strength.	Cases.			Admission rate per 1,000 of mean strength.	Average number of sick daily.	Constantly noneffective per 1,000 of mean strength.	Discharges for disability.	Deaths.	Altitude of stations.	Tempera- ture.			Total precipitation.
		Disease.	Injury.	Total.							Mean.	Maximum.	Minimum.	
										Feet.	°	°	°	In.
Adams, Fort, R. I.....	259	227	88	315	1,216.22	10.30	39.77	2	3	30	.....	.....	.....	.....
Allegheny arsenal, Pa....	29	23	.....	23	793.10	1.12	38.04	.....	1	704	51.6	95	—3	37.84
Augusta arsenal, Ga.....	25	17	1	18	729.00	.39	15.45	.....	1	600	63.8	98	12	48.91
Barrancas, Fort, Fla.....	120	169	57	226	1,883.33	5.33	44.41	6	1	30	67.9	97	23	44.93
Columbia arsenal, Tenn.	17	33	4	37	2,176.47	1.12	66.08	.....	.....	.....	.....	.....	.....	.....
Columbus barracks, Ohio	626	1,445	169	1,614	2,578.27	57.68	92.16	5	7	759	51.2	95	—12	38.12
Columbus, Fort, N. Y....	193	167	43	210	1,088.08	7.51	38.89	5	.....	25	51.3	96	1	53.01
David's Island, N. Y.....	511	984	183	1,167	2,283.76	24.80	48.44	10	2	30	51.3	96	1	53.01
Frankford arsenal, Pa....	42	62	4	66	1,571.43	1.27	30.20	.....	.....	12	52.9	98	0	37.65
Hamilton, Fort, N. Y....	259	389	70	459	1,772.20	9.50	36.68	7	2	47	51.3	96	1	53.01
Jackson barracks, La....	116	126	18	144	1,241.38	4.93	42.51	1	1	10	69.4	95	29	48.02
Kennebec arsenal, Me....	15	39	1	40	2,066.67	.79	52.78	.....	.....	200	.....	.....	.....	.....
Key West barracks, Fla.	61	73	10	83	1,360.66	2.60	42.62	1	.....	12	76.9	91	52	22.00
Madison barracks, N. Y.	325	163	32	195	600.00	6.96	21.43	3	2	262	.....	.....	.....	.....
McHenry, Fort, Md.....	155	145	22	167	1,077.42	6.41	41.38	2	2	36	53.5	98	1	32.15
McPherson, Fort, Ga....	419	513	70	583	1,391.41	22.69	54.17	4	1	1,200	60.7	96	8	36.43
Monroe, Fort, Va.....	467	555	80	644	1,379.01	21.68	46.42	6	4	7	.....	97	.....	.....
Mount Vernon bar- racks, Ala.....	177	314	57	371	2,096.04	8.62	48.70	7	5	200	.....	.....	.....	.....
Myer, Fort, Va.....	259	429	98	527	2,034.75	16.21	62.57	8	2	200	53.7	94	—6	36.35
Newport barracks, Ky.	56	75	14	89	1,589.29	1.25	22.31	.....	.....	588	53.7	95	—11	44.00
New York attending surgeon, N. Y.....	35	9	2	11	314.28	.22	6.18	.....	.....	.....	51.3	96	1	53.01
Niagara, Fort, N. Y....	219	103	43	146	606.67	3.81	17.38	.....	2	271	.....	.....	.....	.....
Ontario, Fort, N. Y.....	63	57	18	75	1,190.48	2.03	32.18	4	.....	282	44.3	92	—6	34.78
Plattsburg barracks, N. Y.....	58	53	11	64	1,103.45	1.64	28.20	2	.....	186	.....	.....	.....	.....
Porter, Fort, N. Y.....	113	179	26	205	1,814.16	4.55	40.22	1	2	600	45.8	90	—5	38.64
Preble, Fort, Me.....	62	44	13	57	919.35	1.74	28.10	.....	.....	51	43.2	93	—9	43.61
Saint Francis barracks, Fla.....	129	201	27	228	1,767.44	5.95	46.13	1	1	10	68.4	94	26	58.43
Sandy Hook, N. J.....	58	121	16	137	2,362.07	1.51	25.98	.....	.....	.....	.....	.....	.....	.....
Schuyler, Fort, N. Y....	113	123	29	152	1,345.13	3.51	31.03	1	.....	25	51.3	96	1	53.01
Springfield armory, Mass.....	29	54	5	59	2,034.48	1.02	35.05	.....	.....	250	.....	.....	.....	.....
Thomas, Fort, Ky.....	368	286	48	334	907.61	9.61	26.10	5	4	920	53.7	95	—11	44.00
Trumbull, Fort, Conn..	64	26	12	38	593.75	1.25	19.52	.....	1	25	47.7	95	—4	41.72
Wadsworth, Fort, N. Y.	176	174	38	212	1,204.55	6.87	39.04	.....	1	160	51.3	96	1	53.01
Warren, Fort, Mass.....	113	108	29	137	1,212.39	4.76	42.16	2	2	38	47.9	94	—4	41.84
Washington barracks, D. C.....	287	543	39	582	2,027.87	15.58	54.27	7	1	106	53.7	97	—6	36.71
Watertown arsenal, Mass.....	38	25	3	28	736.84	.60	15.79	.....	.....	100	47.9	94	—4	41.84
Watervliet arsenal, N. Y.	63	53	14	67	1,063.49	2.43	38.62	1	.....	50	47.0	96	—6	35.39
West Point, N. Y.....	383	424	111	535	1,396.87	9.96	26.00	2	1	167	.....	.....	.....	.....
Willets Point, N. Y....	370	396	99	495	1,337.84	12.67	34.24	.....	2	70	.....	.....	.....	.....
Wood, Fort, N. J.....	56	14	5	19	339.29	.09	1.61	.....	.....	.....	51.3	96	1	53.01
Field.....	16	6	2	8	500.00	.09	5.65	.....	.....	.....	.....	.....	.....	.....
Total.....	6,944	8,947	1,620	10,567	1,521.74	300.97	43.34	93	51	.....	.....	.....	.....	.....

TABLE III.—Military posts in each department, alphabetically arranged, with mean strength, admissions for disease and injury, etc.—Continued.

DEPARTMENT OF THE MISSOURI.

Name of station	Mean strength.
Brady, Fort, Mich.....	170
Chicago headquarters, Ill.....	57
Indianapolis arsenal, Ind.....	24
Jefferson barracks, Mo.....	484
Leavenworth, Fort, Kans.....	742
Leavenworth Prison, Kans.....	118
Mackinac, Fort, Mich.....	60
Reno, Fort, Okla.....	282
Riley, Fort, Kans.....	581
Rock Island arsenal, Ill.....	65
Sheridan, Fort, Ill.....	635
Sill, Fort, Okla.....	310
Supply, Fort, Okla.....	321
Wayne, Fort, Mich.....	246
Field.....	174
Total.....	4,169

DEPARTMENT OF DAKOTA.

DEPARTMENT OF THE PLATTE.

D. A. Russell, Fort, Wyo.....	472	410	105	515	1,091.10	16.45	34.84	3	46,205	45.3	91	—4	9.22
McKinney, Fort, Wyo.....	276	350	92	442	1,601.45	15.00	54.30	2	34,291	45.1	100	—34	8.40
Niobrara, Fort, Nebr.....	457	513	112	625	1,367.61	18.38	40.22	1	52,600	.....	.....	.....	.....
Omaha, Fort, Nebr.....	469	279	73	352	750.53	13.14	28.01	13	4,960	48.8	97	—16	26.66
Omaha headquarters, Nebr.....	38	24	1	25	634.44	.59	16.44	.....	960	48.8	97	16	26.66
Pilot Butte, Camp, Wyo.....	54	36	10	46	851.85	1.32	24.45	1	6,260	42.7	98	—16	9.31
Robinson, Fort, Nebr.....	505	469	100	649	1,285.15	13.61	26.95	2	33,764	47.4	102	—21	10.86
Sidney Fort, Nebr.....	190	215	56	271	1,361.81	7.49	37.64	1	34,328	47.0	102	—15	8.67
Washakie, Fort, Wyo.....	160	140	48	188	1,175.00	5.15	32.17	.....	5,462	43.0	97	—14	8.22
Field.....	37	21	6	27	729.73	.18	4.96	.....	.....	.....	.....	.....	.....
Total.....	2,665	2,477	663	3,140	1,178.24	91.32	34.26	23	22	.....	.....	.....	.....

TABLE III.—Military posts in each department, alphabetically arranged, with mean strength, admissions for disease and injury, etc.—Continued.

DEPARTMENT OF TEXAS.													
Name of station.	Mean strength.	Cases.			Admission rate per 1,000 of mean strength.	Average number of sick daily.	Constantly noneffective per 1,000 of mean strength.	Discharges for disability.	Deaths.	Altitude of stations.	Temperature.		
		Disease.	Injury.	Total.							Mean.	Maximum.	Minimum.
										Feet.	°	°	°
Bliss, Fort, Tex.....	155	301	40	341	2,200.00	7.27	40.89	1	4	3,700	63.8	104	18
Brown, Fort, Tex.....	83	144	12	156	1,879.52	5.05	60.90	....	1	47	....	....	27
Clark, Fort, Tex.....	314	603	77	680	2,165.60	25.05	79.79	10	2	1,133	71.1	107	23
Eagle Pass, Camp, Tex..	56	105	18	123	2,196.43	3.85	68.74	....	....	800	71.4	109	22
Hancock, Fort, Tex.....	53	70	25	95	1,792.45	3.19	60.28	....	....	2,500	59.8	110	3
McIntosh, Fort, Tex....	165	162	39	201	1,218.18	10.85	65.62	3	3	806	73.4	105	24
Ringgold, Fort, Tex....	149	251	38	289	1,939.60	11.40	76.51	2	3	147	73.7	112	26
San Houston, Fort, Tex.	501	559	122	681	1,359.28	23.01	45.93	12	3	779	70.1	103	26
San Antonio headquar- ters, Tex.	34	6	....	6	176.46	.46	13.54	....	2	781	70.1	103	26
Field.....	223	127	37	164	735.43	3.42	15.32	....	2	....	....	....	....
Total	1,733	2,328	408	2,736	1,578.76	93.53	53.97	28	20	....	....	....	....

DEPARTMENT OF THE COLORADO.													
Apache, Fort, Ariz.....	230	207	64	271	1,178.26	7.36	32.00	3	1	5,200	54.5	98	12
Bayard, Fort, N. Mex..	836	238	48	286	851.19	10.38	30.89	7	5	6,750	55.7	99	13
Bowie, Fort, Ariz.....	110	79	44	123	1,118.18	4.53	41.14	5	....	4,781	62.3	101	21
Denver headquarters, Colo.	12	6	....	6	500.00	.08	7.08	....	....	....	50.9	96	—2
Douglas, Fort, Utah....	544	546	100	646	1,187.50	17.27	31.75	8	5	4,920	50.2	99	4
DuChesne, Fort, Utah..	120	91	36	127	1,058.33	3.45	28.77	1	....	5,000	....	....	9.02
Grant, Fort, Ariz.....	291	342	104	446	1,532.65	14.74	50.65	8	....	4,916	62.5	104	23
Huachuca, Fort, Ariz..	292	318	64	382	1,308.22	11.28	38.63	3	3	5,100	61.1	101	20
Logan, Fort, Colo.....	359	323	82	405	1,128.13	11.49	32.01	3	3	5,450	50.9	96	—2
Marcy, Fort, N. Mex...	165	155	49	204	1,236.36	7.45	45.13	4	1	7,027	49.4	89	5
San Carlos, Ariz.....	175	117	40	157	897.14	5.75	32.86	....	....	12,456	63.4	110	17
Stanion, Fort, N. Mex..	107	65	16	81	757.01	1.99	18.56	3	2	6,152	....	....	....
Whipple barracks, Ariz.	232	280	30	310	1,336.21	10.82	46.66	6	....	5,318	51.3	95	—2
Wingate, Fort, N. Mex.	351	425	124	549	1,564.10	17.08	48.68	2	....	7,000	....	....	....
Field	134	81	43	124	925.37	1.82	13.56	....	1	....	....	....	....
Total	3,458	3,273	844	4,117	1,190.57	125.49	36.29	53	22	....	....	....	....

DEPARTMENT OF CALIFORNIA.													
Alcatraz Island, Cal....	118	63	19	82	694.91	2.17	18.37	1	4	135	....	....	....
Angel Island, Cal.....	299	224	23	247	826.09	11.97	40.04	7	3	150	....	....	....
Benicia barracks, Cal...	212	119	49	168	792.45	4.97	23.43	5	1	160	....	....	....
Bidwell, Fort, Cal.....	47	54	32	86	1,829.79	2.08	44.24	1	....	4,860	....	....	....
Mason, Fort, Cal.....	62	34	12	46	741.94	2.88	46.49	4	....	80	....	....	....
Presidio of San Fran- cisco, Cal.....	490	420	163	583	1,189.80	19.19	39.17	8	3	72	54.3	90	36
San Diego barracks, Cal.	66	81	8	89	1,348.48	3.28	49.73	2	....	600	6	88	38
San Francisco head- quarters, Cal.....	44	2	....	2	45.45	.26	5.98	....	....	....	54.3	90	36
Field	52	32	21	53	1,019.23	1.17	22.44	....	....	....	....	....	....
Total	1,390	1,029	327	1,356	975.54	47.98	34.51	28	11	....	....	....	....

DEPARTMENT OF THE COLUMBIA.													
Boise barracks, Idaho..	109	62	25	87	798.17	1.85	16.97	3	1	2,765	48.4	106	0
Canby, Fort, Wash....	106	54	20	74	698.11	2.43	22.93	1	1	8	48.7	82	16
Sherman, Fort, Idaho..	307	176	64	240	781.76	7.25	23.63	1	3	2,140	44.3	98	—23
Spokane, Fort, Wash...	141	58	35	93	659.57	3.84	27.22	1	....	1,400	45.2	102	—29
Townsend, Fort, Wash.	64	39	10	49	765.62	.95	14.85	....	....	135	47.9	85	—3
Vancouver barracks, Wash.....	440	195	33	228	518.18	6.62	15.06	7	2	50	50.1	94	8
Walla Walla, Fort, Wash.....	189	225	59	284	1,502.65	10.83	57.29	6	1	865	50.6	103	—15
Field	26	19	16	35	1,346.15	.33	12.85	....	....	....	....	....	....
Total	1,382	828	262	1,090	788.71	34.11	24.68	19	8	....	....	....	....

TABLE IV.—A general view of the results of disease and injury at each of the various military stations, arranged in the order of their mean strength.

GROUP 1.—Twenty stations, garrisoned by 400 to 700 men each. Average, 508.

Name of station.	Mean strength.	Admission rate per 1,000 of mean strength.	Constantly nonef- fective.			Deaths.		Discharges.	
			Daily aver- age in hos- pital.	Ratios per 1,000 of mean strength of—		No.	Ratio per 1,000 of mean strength.	No.	Ratio per 1,000 of mean strength.
				Cases in hos- pital.	All cases.				
Fort Leavenworth, Kans.....	742	1,432.61	18.14	24.45	45.47	3	4.04	16	21.56
Fort Sheridan, Ill.....	635	1,281.89	15.12	23.81	32.71	2	3.15	8	12.60
Columbus barracks, Ohio.....	626	2,578.27	47.58	76.01	92.16	7	11.18	5	7.99
Fort Riley, Kans.....	581	1,358.00	11.22	19.32	38.93	5	8.61	3	5.16
Fort Douglas, Utah.....	544	1,187.50	11.76	21.61	31.75	5	9.19	8	14.71
Fort Assiniboine, Mont.....	514	1,182.88	11.15	21.70	31.29	1	1.95	5	9.73
Davids Island, N. Y.....	511	2,283.76	13.70	26.82	48.44	2	3.91	10	19.57
Fort Robinson, Nebr.....	505	1,285.15	9.20	18.21	26.95	3	5.94	2	3.96
Fort Sam Houston, Tex.....	501	1,359.28	16.76	33.45	45.93	3	5.99	12	23.95
Presidio of San Francisco, Cal....	490	1,189.80	14.16	28.90	39.17	3	6.12	8	16.33
Jefferson barracks, Mo.....	484	2,004.13	24.13	49.85	50.59	2	4.13	3	6.20
Fort D. A. Russell, Wyo.....	472	1,091.10	12.80	27.12	34.84	4	8.47	3	6.36
Fort Omaha, Nebr.....	469	750.53	8.49	18.10	28.01	4	8.53	13	27.72
Fort Monroe, Va.....	467	1,379.01	15.06	32.25	46.42	4	8.57	6	12.85
Fort Keogh, Mont.....	459	1,633.99	12.65	39.49	52.11	3	6.54	13	28.32
Fort Niobrara, Nebr.....	457	1,367.61	13.18	28.84	40.22	5	10.94	1	2.19
Vancouver barracks, Wash.....	440	518.18	5.02	11.41	15.06	2	4.55	7	15.91
Fort Snelling, Minn.....	432	979.17	11.47	26.55	39.41	2	4.63	4	9.26
Fort McPherson, Ga.....	419	1,391.41	13.19	31.48	54.17	1	2.39	4	9.55
Fort Meade, S. Dak.....	412	1,500.00	14.93	36.25	51.76	1	2.43	16	38.84
Summary.....	10,160	1,409.65	299.72	29.50	45.32	62	6.10	147	14.47

GROUP 2.—Eleven stations, garrisoned by 300 to 400 men each. Average, 344.

West Point, N. Y.....	383	1,396.87	2.94	7.67	26.00	1	2.61	2	5.22
Willets Point, N. Y.....	370	1,337.84	8.62	23.31	34.24	2	5.41	.....	.....
Fort Thomas, Ky.....	368	907.61	8.06	21.90	26.10	4	10.87	5	13.59
Fort Custer, Mont.....	363	833.33	4.32	11.90	13.17	7	19.28	3	8.26
Fort Logan, Colo.....	359	1,128.13	8.38	23.34	32.01	3	8.36	3	8.36
Fort Wingate, N. Mex.....	351	1,564.16	8.94	25.56	48.68	.....	.....	2	5.70
Fort Bayard, N. Mex.....	336	851.19	7.66	22.78	30.89	5	14.88	7	20.83
Madison barracks, N. Y.....	325	600.00	3.67	11.30	21.43	2	6.15	3	9.23
Fort Clark, Tex.....	314	2,165.60	15.98	50.88	79.79	2	6.37	10	31.85
Fort Sill, Okla.....	310	1,358.06	9.14	29.48	50.45	4	12.90	5	16.13
Fort Sherman, Idaho.....	307	781.76	4.11	13.39	23.63	3	9.77	1	3.26
Summary.....	3,786	1,125.46	81.85	21.62	34.57	33	8.72	41	10.83

GROUP 3.—Seventeen stations, garrisoned by 200 to 300 men each. Average, 260.

Angel Island, Cal.....	299	826.09	9.10	30.45	40.04	3	10.03	7	23.41
Fort Huachuca, Ariz.....	292	1,308.22	7.58	25.97	38.63	3	10.27	3	10.27
Fort Grant, Ariz.....	291	1,532.65	10.61	36.46	50.65	.....	.....	8	27.49
Washington barracks, D. C.....	287	2,027.87	14.49	50.48	54.27	1	3.48	7	24.39
Fort Buford, N. Dak.....	285	968.42	7.63	26.76	34.27	2	7.02	2	7.02
Fort Reno, Okla.....	282	1,734.04	14.03	49.74	59.28	4	14.18	6	21.28
Fort McKinney, Wyo.....	276	1,601.45	11.15	40.41	54.36	3	10.87	2	7.25
Fort Yates, N. Dak.....	267	1,520.60	5.80	21.71	44.02	3	11.24	5	18.73
Fort Adams, R. I.....	259	1,216.22	5.57	21.50	39.77	3	11.58	2	7.72
Fort Hamilton, N. Y.....	259	1,772.20	4.20	16.21	36.68	2	7.72	7	27.03
Fort Myer, Va.....	259	2,034.75	9.43	36.41	62.57	2	7.72	8	30.89
Fort Wayne, Mich.....	246	1,162.60	4.85	19.71	37.99	1	4.07	10	40.66
Whipple barracks, Ariz.....	232	1,336.21	8.95	38.57	46.66	.....	.....	6	25.86
Fort Apache, Ariz.....	230	1,178.26	5.52	23.98	32.00	1	4.35	3	13.04
Fort Supply, Okla.....	221	1,497.74	7.67	34.70	44.75	.....	.....	9	40.72
Fort Niagara, N. Y.....	219	666.67	2.56	11.67	17.38	2	9.13	.....	.....
Benicia barracks, Cal.....	212	792.45	2.96	13.97	23.43	1	4.72	5	23.58
Summary.....	4,416	1,377.49	132.08	29.91	42.80	81	7.02	90	20.38

TABLE IV.—A general view of the results of disease and injury at each of the various military stations, etc.—Continued.

GROUP 4.—Thirty stations, garrisoned by 100 to 200 men each. Average, 144.

Name of station	Mean strength.	Admission rate per 1,000 of mean strength.	Constantly nonefective.			Deaths.		Discharges.	
			Daily average in hospital.	Ratios per 1,000 of mean strength of—		No.	Ratio per 1,000 of mean strength.	No.	Ratio per 1,000 of mean strength.
				Cases in hospital.	All cases.				
Fort Missoula, Mont.....	199	773.87	3.06	15.36	18.10	1	5.03	5	25.13
Fort Sidney, Nebr.....	199	1,361.81	5.08	25.51	37.64	3	15.07	1	5.03
Fort Columbus, N. Y.....	193	1,088.08	5.15	26.68	38.89	.....	.....	5	25.91
Fort Walla Walla, Wash.....	189	1,502.65	6.22	32.93	57.29	1	5.29	6	31.75
Mount Vernon barracks, Ala....	177	2,096.04	4.53	25.58	48.70	5	28.25	7	39.55
Fort Wadsworth, N. Y.....	176	1,204.55	3.93	22.32	39.04	1	5.68	.....	.....
San Carlos, Ariz.....	175	897.14	4.61	26.36	32.86	1	5.71	.....	.....
Fort Sully, S. Dak.....	171	725.15	2.05	10.37	17.67	2	11.70	2	11.70
Fort Brady, Mich.....	170	970.59	4.57	26.90	34.13	.....	.....	5	29.41
Fort Marcy, N. Mex.....	165	1,236.36	4.44	26.92	45.13	1	6.06	4	24.24
Fort McIntosh, Tex.....	165	1,218.18	9.11	55.20	65.62	3	18.18	3	18.18
Fort Washakie, Wyo.....	160	1,175.00	3.51	21.94	32.17	.....	.....	.....	.....
Fort Bliss, Tex.....	155	2,200.00	4.70	30.31	46.89	4	25.81	1	6.45
Fort McHenry, Md.....	155	1,077.42	4.96	31.99	41.38	2	12.90	2	12.90
Fort Ringgold, Tex.....	149	1,939.60	9.38	62.96	76.51	3	20.13	2	13.43
Fort Spokane, Wash.....	141	659.57	3.05	21.61	27.22	.....	.....	1	7.09
Saint Francis barracks, Fla.....	120	1,767.44	4.47	34.64	46.13	1	7.75	1	7.75
Fort Barrancas, Fla.....	120	1,883.33	3.69	30.78	44.41	1	8.33	6	50.00
Fort DuChesne, Utah.....	120	1,058.33	2.45	20.41	28.77	.....	.....	1	8.33
Alcatraz Island, Cal.....	118	694.91	1.69	14.30	18.37	4	33.90	1	8.47
Leavenworth Prison, Kans.....	118	779.66	3.86	32.69	42.74	2	16.95	1	8.47
Jackson barracks, La.....	116	1,241.38	4.05	34.91	42.51	1	8.62	1	8.62
Fort Porter, N. Y.....	113	1,814.16	2.56	22.67	40.22	2	17.70	1	8.85
Fort Schuyler, N. Y.....	113	1,345.13	2.24	19.83	31.03	.....	.....	1	8.85
Fort Warren, Mass.....	113	1,212.39	3.11	27.49	42.16	2	17.70	2	17.70
Fort Bowie, Ariz.....	110	1,118.18	3.12	28.39	41.14	.....	.....	5	45.45
Boise barracks, Idaho.....	109	798.17	1.43	13.12	16.97	1	9.17	3	27.52
Fort Stanton, N. Mex.....	107	757.01	.88	8.19	18.56	2	18.60	3	28.04
Fort Canby, Wash.....	106	698.11	1.87	17.65	22.93	1	9.43	1	9.43
Fort Yellowstone, Wyo.....	100	520.00	1.81	18.05	20.77	1	10.00	1	10.00
Summary.....	4,331	1,210.11	115.56	26.68	37.99	45	10.39	72	16.62

GROUP 5.—Thirty-six stations, garrisoned by 1 to 100 men each. Average, 49.

Fort Brown, Tex.....	83	1,879.52	4.77	57.47	60.90	1	12.05	.....	.....
Camp Poplar River, Mont.....	75	1,093.38	.96	12.79	64.48	.....	.....	1	13.33
San Diego barracks, Cal.....	66	1,348.48	2.41	36.53	49.73	.....	.....	2	30.30
Rock Island arsenal, Ill.....	65	1,184.62	.85	13.11	28.20	.....	.....	.....	.....
Fort Townsend, Wash.....	64	765.62	.48	7.58	14.85	.....	.....	.....	.....
Fort Trumbull, Conn.....	64	593.75	.78	12.16	19.52	1	15.62	.....	.....
Fort Ontario, N. Y.....	63	1,190.48	1.47	23.26	32.18	.....	.....	4	63.49
Watervliet arsenal, N. Y.....	63	1,063.49	.90	14.26	38.62	.....	.....	1	15.87
Fort Mason, Cal.....	62	741.94	1.98	31.99	46.49	.....	.....	4	64.52
Fort Proble, Me.....	62	919.35	1.07	17.28	28.10	.....	.....	.....	.....
Key West barracks, Fla.....	61	1,360.66	1.84	30.09	42.62	.....	.....	1	16.39
Fort Mackinac, Mich.....	60	583.33	1.02	16.99	24.25	.....	.....	1	16.67
Fort Pembina, N. Dak.....	59	898.31	.57	9.66	17.41	.....	.....	1	16.93
Plattsburg barracks, N. Y.....	58	1,103.45	1.38	23.71	28.20	.....	.....	2	34.48
Sandy Hook, N. J.....	58	2,362.07	.....	.....	25.98	.....	.....	.....	.....
Chicago headquarters, Ill.....	57	350.88	.....	.....	15.67	2	35.09	.....	.....
Camp Eagle Pass, Tex.....	56	2,196.43	1.77	31.65	68.74	.....	.....	.....	.....
Newport barracks, Ky.....	56	1,589.29	.68	12.18	22.31	.....	.....	.....	.....
Fort Wood, N. J.....	56	339.29	.05	.93	1.61	.....	.....	.....	.....
Camp Pilot Butte, Wyo.....	54	851.85	1.02	18.92	24.45	.....	.....	1	18.52
Fort Hancock, Tex.....	53	1,792.45	2.15	40.58	60.28	.....	.....	.....	.....
Fort Bidwell, Cal.....	47	1,829.79	1.25	26.58	44.24	.....	.....	1	21.28
San Francisco headquarters, Cal.....	44	45.45	.....	.....	5.98	.....	.....	.....	.....
Frankford arsenal, Pa.....	42	1,571.43	.....	.....	30.20	.....	.....	.....	.....
Saint Paul headquarters, Minn.....	42	214.29	.....	.....	15.65	1	23.81	1	23.81
Watertown arsenal, Mass.....	38	736.84	.33	8.58	15.79	.....	.....	.....	.....
Omaha headquarters, Nebr.....	36	694.44	.....	.....	16.44	.....	.....	.....	.....
New York attending surgeon, N. Y.....	35	314.28	.....	.....	6.18	.....	.....	.....	.....
San Antonio headquarters, Tex.....	34	176.46	.02	.48	13.54	2	58.82	.....	.....
Allegheny arsenal, Pa.....	29	793.10	.02	.85	38.64	1	34.48	.....	.....
Springfield Armory, Mass.....	29	2,034.48	.04	1.32	35.05	.....	.....	.....	.....

TABLE IV.—*A general view of the results of disease and injury at each of the various military stations, etc.—Continued.*

GROUP 5.—Thirty-six stations, garrisoned by 1 to 100 men each. Average, 49—Continued.

Name of station.	Mean strength.	Admission rate per 1,000 of mean strength.	Constantly noneffective.			Deaths.		Discharges.	
			Daily average in hospital.	Ratios per 1,000 of mean strength of—		No.	Ratio per 1,000 of mean strength.	No.	Ratio per 1,000 of mean strength.
				Cases in hospital.	All cases.				
Angusta arsenal, Ga	25	720.00	.25	10.19	15.45	1	40.00	.....	.....
Indianapolis arsenal, Ind	24	1,333.33	.33	13.93	44.98	1	41.67	.....	.....
Columbia arsenal, Tenn	17	2,176.47	.....	.....	66.08	.....	.....	.....	.....
Kennebec arsenal, Me.	15	2,666.67	.38	25.39	52.78	.....	.....	.....	.....
Denver headquarters, Colo.	12	500.00	.....	.....	7.08	.....	.....	.....	.....
Summary	1,760	1,103.06	28.78	16.30	32.23	10	5.66	20	11.32

GROUP 6.—Field.

Department of Texas	223	735.43	.....	.....	15.32	2	8.97	.....	.....
Department of the Missouri	174	890.80	.....	.....	12.80	1	5.75	.....	.....
Department of the Colorado	134	925.37	.....	.....	13.56	1	7.46	.....	.....
Department of Dakota	127	1,196.85	.....	.....	24.44	1	7.87	.....	.....
Department of California	52	1,019.23	.....	.....	22.44	.....	.....	.....	.....
Department of the Platte	37	729.73	.....	.....	4.96	.....	.....	.....	.....
Department of the Columbia	26	1,346.15	.....	.....	12.85	.....	.....	.....	.....
Department of the East	16	500.00	.....	.....	5.65	.....	.....	.....	.....
Summary	789	910.01	.....	.....	15.64	5	6.34	.....	.....
Hot Springs, Ark.	41	560.98	.....	.....	.....	2	.....	17	.....
At large .....	.....	.....	.....	.....	.....	3	.....	26	.....
Total for the Army	25,287	1,289.04	684.97	27.09	40.15	191	0.91	413	14.93

TABLE V.—*Twenty posts having the highest admission rates for the year 1893; also their admission rates for the years 1888 to 1892, inclusive.*

Name of station.	Mean strength.	Ratios per 1,000 of mean strength.				Admission rates per 1,000 of mean strength.				
		Admissions.	Deaths.	Discharges.	Constantly non-effective.	1892.	1891.	1890.	1889.	1888.
Columbus barracks, Ohio ..	626	2,578.27	11.18	7.99	92.10	2,050.23	2,209.89	1,876.49	2,318.86	2,075.66
Sandy Hook, N. J	58	2,362.07	.....	.....	25.98	1,884.62	1,590.91	1,812.50	.....	.....
David's Island, N. Y	511	2,283.76	3.91	19.57	48.44	2,115.32	1,884.82	1,642.86	1,259.07	1,533.12
Fort Bliss, Tex	155	2,200.00	25.81	6.45	46.89	822.43	1,127.27	975.61	1,067.80	1,512.04
Camp Eagle Pass, Tex	56	2,196.43	.....	.....	68.74	2,113.21	1,788.46	2,053.57	1,145.45	788.46
Fort Clark, Tex	314	2,165.60	6.37	31.85	79.79	1,538.94	1,256.72	1,669.44	1,355.30	1,433.87
Mount Vernon barracks, Ala.	177	2,096.04	28.25	39.55	48.70	1,817.68	1,291.93	1,522.52	1,344.83	1,368.42
Fort Myer, Va	259	2,034.75	7.72	30.89	62.57	1,618.64	1,063.58	1,350.36	1,186.05	1,391.30
Washington barracks, D. C	287	2,027.87	3.48	24.39	54.27	1,981.93	1,774.19	1,329.41	1,139.44	1,723.48
Jefferson barracks, Mo.	484	2,004.13	4.13	6.20	50.59	875.49	1,068.49	1,000.00	966.98	1,950.07
Fort Ringgold, Tex	149	1,939.60	20.13	13.42	76.51	1,716.42	1,366.07	865.55	562.50	818.84
Fort Brown, Tex	83	1,879.52	12.05	.....	60.90	576.27	790.32	1,881.48	3,710.34	3,812.50
Fort Barrancas, Fla	120	1,883.33	8.33	50.00	44.41	1,986.67	2,629.63	1,674.42	1,360.66	1,109.09
Fort Porter, N. Y	113	1,814.16	17.70	8.85	40.22	1,133.33	1,047.17	1,010.53	710.84	948.06
Fort Hancock, Tex	53	1,792.45	.....	.....	60.28	1,860.00	1,530.61	1,183.67	1,695.65	1,591.84
Fort Hamilton, N. Y	259	1,772.20	7.72	27.03	36.68	2,354.96	2,329.32	1,626.26	1,552.63	1,107.14
Saint Francis barracks, Fla	129	1,767.44	7.75	7.75	46.13	1,967.48	3,121.50	2,015.38	1,568.97	1,378.79
Fort Reno, Okla	282	1,734.04	14.18	21.28	59.28	1,917.72	2,111.92	1,922.30	1,474.51	1,378.55
Fort Keogh, Mont	459	1,633.99	6.54	28.32	52.11	1,264.25	1,328.40	674.35	868.29	1,133.51
Fort McKinney, Wyo	276	1,601.45	10.87	7.25	54.36	1,318.52	1,277.98	849.32	587.57	1,287.96

TABLE VI.—Twenty posts having the lowest admission rates for the year 1893; also their admission rates for the years 1888 to 1892, inclusive.

Name of station.	Mean strength.	Ratios per 1,000 of mean strength.				Admission rates per 1,000 of mean strength.				
		Admissions.	Deaths.	Discharges.	Constantly non-effective.	1892.	1891.	1890.	1889.	1888.
Fort Custer, Mont.....	363	333.33	19.28	8.26	13.17	1,534.18	1,585.56	1,380.66	1,266.86	1,245.33
Fort Wood, N. J.....	56	339.29	.....	.....	* 1.61	685.19	196.43	500.00	648.65	684.21
Chicago headquarters, Ill.	57	350.88	35.09	.....	15.67	192.31	192.31	275.86	322.03	324.32
Vancouver barracks, Wash.....	440	518.18	4.55	15.91	15.06	727.27	841.49	1,211.90	1,310.70	1,269.84
Fort Yellowstone, Wyo...	100	520.00	10.00	10.00	20.77	1,105.26	1,033.90	1,261.54	1,655.73	1,392.86
Fort Mackinac, Mich.....	60	583.33	.....	16.67	24.25	736.84	1,254.55	1,606.38	1,555.56	1,325.00
Fort Trumbull, Conn.....	64	593.75	15.62	.....	19.52	1,048.39	769.23	1,115.38	1,333.33	750.00
Madison barracks, N. Y...	325	600.00	6.15	9.23	21.43	1,108.10	1,528.48	1,395.16	1,395.83	1,321.74
Fort Spokane, Wash.....	141	659.57	.....	7.09	27.22	518.52	696.77	1,260.00	1,447.49	1,489.45
Fort Niagara, N. Y.....	219	666.67	9.13	.....	17.38	670.21	808.22	1,131.58	860.22	588.96
Alcatraz Island, Cal.....	118	694.91	33.90	8.47	18.37	1,025.04	1,097.35	1,076.09	694.74	851.06
Fort Canby, Wash.....	106	698.11	9.43	9.43	22.93	1,262.45	1,730.00	1,126.98	1,607.14	.....
Fort Sully, S. Dak.....	171	725.15	11.70	11.70	17.67	1,414.77	1,443.66	937.50	1,040.23	1,154.29
Fort Mason, Cal.....	62	741.94	.....	64.52	46.49	689.66	838.71	1,031.25	1,000.00	782.61
Fort Omaha, Nebr.....	469	750.53	8.53	27.72	28.01	1,223.60	1,234.45	672.29	1,084.88	1,465.71
Fort Stanton, N. Mex.....	107	757.01	18.69	28.04	18.56	1,250.00	1,427.48	1,661.65	1,217.11	567.90
Fort Townsend, Wash.....	64	765.62	.....	.....	14.85	640.62	750.00	827.59	1,000.00	1,076.92
Fort Missoula, Mont.....	199	773.87	5.03	25.13	18.16	603.17	983.87	1,265.71	867.65	1,026.45
Leavenworth Prison, Kans	118	779.66	16.95	8.47	43.74	843.47	816.51	939.13	1,093.22	752.14
Fort Sherman, Idaho.....	307	781.76	9.77	3.26	23.63	637.93	879.00	1,838.24	1,308.94	1,271.19
The Army.....	25,287	1,289.04	6.91	14.93	40.15	1,270.42	1,364.78	1,384.25	1,315.02	1,270.73

* Cases usually transferred to Fort Columbus for treatment.

TABLE VII.—Twenty posts having the highest noneffective rates for the year 1893; also their noneffective rates for the years 1888 to 1892, inclusive.

Name of station	Mean strength.	Constantly noneffective per 1,000 of mean strength.	Average sick daily.	Average of days each case was treated.	Constantly noneffective per 1,000 of mean strength.				
					1892.	1891.	1890.	1889.	1888.
Columbus barracks, Ohio.....	626	92.16	57.68	13.05	71.98	77.13	77.55	92.74	81.87
Fort Clark, Tex.....	314	79.79	25.05	13.45	60.77	39.61	65.25	60.05	51.71
Fort Ringgold, Tex.....	149	76.51	11.40	14.40	70.14	52.05	26.61	23.34	35.44
Camp Eagle Pass, Tex.....	56	68.74	3.85	11.42	76.30	49.21	59.59	60.17	38.15
Fort McIntosh, Tex.....	165	65.62	10.85	19.66	68.91	54.97	25.31	53.75	62.23
Camp Poplar River, Mont.....	75	64.48	4.84	21.52	26.62	18.85	33.47	29.05	35.78
Fort Myer, Va.....	259	62.57	16.21	11.22	40.55	35.98	37.20	33.47	34.71
Fort Brown, Tex.....	83	60.90	5.05	11.83	36.91	38.18	65.23	114.44	96.48
Fort Hancock, Tex.....	53	60.28	3.19	12.27	44.65	49.65	44.95	59.68	42.04
Fort Reno, Okla.....	282	59.28	16.72	12.48	67.57	59.47	56.53	61.55	46.85
Fort Walla Walla, Wash.....	189	57.29	10.83	13.91	37.54	52.32	47.71	42.78	45.90
Fort McKinney, Wyo.....	276	54.36	15.00	12.39	45.36	39.46	30.76	24.63	36.51
Washington barracks, D. C.....	287	54.27	15.58	9.77	43.22	47.61	51.86	44.21	48.20
Fort McPherson, Ga.....	419	54.17	22.69	14.21	58.04	61.12	61.16	72.80	.....
Fort Keogh, Mont.....	459	52.11	23.91	11.64	37.46	40.53	25.66	34.20	39.82
Fort Meade, S. Dak.....	412	51.76	21.32	12.59	44.91	47.04	35.34	35.73	35.56
Fort Grant, Ariz.....	291	50.65	14.74	12.06	47.61	34.91	32.09	47.45	50.76
Jefferson barracks, Mo.....	484	50.59	24.49	9.21	32.34	34.62	38.65	48.65	79.71
Fort Sill, Okla.....	310	50.45	15.64	13.56	37.26	45.67	47.41	44.93	44.75
San Diego barracks, Cal.....	66	49.73	3.28	13.47	78.88	90.15	122.48	77.07	53.87

TABLE VIII.—Twenty posts having the lowest noneffective rates for the year 1893; also their noneffective rates for the years 1888 to 1892, inclusive.

Name of station.	Mean strength.	Constantly noneffective per 1,000 of mean strength.	Average sick daily.	Average days each case was treated.	Constantly noneffective per 1,000 of mean strengt'.				
					1892.	1891.	1890.	1889.	1888.
Fort Custer, Mont	363	13.17	4.78	14.42	51.14	59.43	57.91	49.72	49.58
Fort Townsend, Wash.....	64	14.85	.95	7.08	13.66	21.92	16.77	21.92	27.06
Vancouver barracks, Wash	440	15.06	6.62	10.61	28.10	33.51	39.02	45.84	42.19
Chicago headquarters, Ill	57	15.67	.89	16.30	8.72	11.85	14.22	6.41	8.64
Boise barracks, Idaho	109	16.97	1.85	7.76	22.64	34.48	33.01	28.83	53.11
Fort Niagara, N. Y.....	219	17.38	3.81	9.51	29.37	17.72	28.74	34.47	24.44
Fort Pembina, N. Dak.....	59	17.41	1.03	7.08	18.03	5.40	15.38	31.37	23.16
Fort Sully, S. Dak.....	171	17.67	3.02	8.90	39.99	41.00	34.74	46.35	28.01
Fort Missoula, Mont.....	199	18.16	3.61	8.56	20.64	20.90	28.93	30.00	36.70
Alcatraz Island, Cal.....	118	18.37	2.17	9.65	40.35	48.15	44.43	23.82	41.56
Fort Stanton, N. Mex	107	18.56	1.99	8.95	43.28	33.63	67.83	39.13	25.05
Fort Trumbull, Conn	64	19.52	1.25	12.00	36.93	22.55	34.19	38.81	20.30
Fort Yellowstone, Wyo	100	20.77	2.08	14.58	23.62	35.20	39.41	62.56	50.25
Madison barracks, N. Y	325	21.43	6.96	13.04	34.40	32.24	30.50	43.93	36.51
Newport barracks, Ky	56	22.31	1.25	5.12	33.70	32.75	51.92	33.25	17.60
Fort Canby, Wash	106	22.93	2.43	11.99	54.85	47.15	35.22	34.05	.....
Benicia barracks, Cal	212	23.43	4.97	10.79	21.24	24.14	42.03	37.16	65.30
Fort Sherman, Idaho.....	307	23.63	7.25	11.03	25.73	25.50	44.15	34.75	36.27
Fort Mackinac, Mich.....	60	24.25	1.45	15.17	15.48	29.44	26.73	21.24	25.92
Camp Pilot Butte, Wyo	54	24.45	1.32	10.48	31.25	23.66	27.01	33.57	43.27
The Army.....	25,287	40.15	1,015.37	11.37	39.60	42.01	42.71	44.12	41.91

TABLE IX.—Twenty posts having the highest admission rates for disease, excluding venereal diseases, vaccina, and alcoholism; also, their ratios for deaths, discharges, and constant noneffectireness, and the corresponding average rates for the Army, year 1893.

Name of station.	Mean strength.	Ratios per 1,000 of mean strength.			
		Admis-sions.	Deaths.	Dis-charges.	Con-stantly non-effective.
Sandy Hook, N. J.....	58	1,982.77	.....	.....	19.42
Fort Bliss, Tex	155	1,787.10	12.90	.....	36.56
Fort Clark, Tex.....	314	1,729.29	3.19	6.88	60.45
Washington barracks, D. C	287	1,662.01	3.48	20.91	34.08
Camp Eagle Pass, Tex	56	1,642.85	.....	.....	47.86
Columbus barracks, Ohio.....	626	1,600.60	9.58	3.20	47.97
Mount Vernon barracks, Ala.....	177	1,525.41	16.95	28.25	34.34
Fort Myer, Va	259	1,498.06	3.86	27.03	34.34
Fort Ringgold, Tex	149	1,422.83	13.42	6.71	46.57
Fort Brown, Tex	83	1,409.65	.....	.....	34.39
David's Island, N. Y.....	511	1,397.28	3.91	13.70	25.30
Fort Hamilton, N. Y	259	1,355.22	.....	19.31	21.48
Jefferson barracks, Mo.....	484	1,342.97	.....	2.07	32.73
Fort Reno, Okla.....	282	1,312.05	10.64	14.18	42.79
Saint Francis barracks, Fla	129	1,310.08	.....	7.75	30.60
Fort Keogh, Mont.....	459	1,209.16	2.18	10.90	32.95
Fort Barrancas, Fla	120	1,208.34	8.33	41.67	28.69
Fort Porter, N. Y	113	1,185.84	8.85	8.85	21.66
Fort Hancock, Tex.....	53	1,150.94	.....	.....	20.57
Fort Supply, Okla.....	221	1,135.76	.....	27.15	30.44
The Army	25,287	893.66	3.66	10.44	25.19

TABLE X.—Twenty posts having the highest noneffective rates for disease, excluding venereal diseases, vaccina, and alcoholism; also the average number sick daily, the average duration of each case, and the corresponding average rates of the Army, year 1893.

Name of station.	Mean strength.	Ratios per 1,000 of mean strength constantly non-effective.	Average number of sick daily.	Average number of days each case was treated.
Fort Clark, Tex	314	60.45	21.35	12.41
do	626	47.97	42.61	11.07
do	56	47.86	2.99	9.58
do	149	46.57	9.05	13.00
do	283	42.79	15.67	12.07
do	75	41.28	4.12	19.53
do	66	39.85	3.17	13.31
do	232	37.71	10.40	12.49
do	155	36.56	6.55	7.27
do	467	25.97	19.61	11.49
do	189	25.89	8.78	12.23
do	165	34.47	7.92	17.52
do	259	34.44	14.04	10.11
Fort Mifflin, Pa	483	34.39	8.43	9.35
Mount Vernon barracks, Ala	177	34.34	7.87	7.39
Washington barracks, D. C	287	34.08	11.70	8.00
Fort Yates, N. Dak	207	34.08	11.65	10.52
Leavenworth Prison, Kans	118	33.97	4.39	18.15
Fort Keogh, Mont	450	32.95	21.63	10.90
Fort McKinney, Wyo	276	32.76	12.20	10.51
The Army	25,287	25.19	637.07	10.29

TABLE XI.—The military posts in each department, showing the rates of admission, death, discharge, and constant noneffectiveness for disease, not including venereal diseases, vaccina, nor alcoholism, year 1893.

DEPARTMENT OF THE EAST.

(Excluding venereal diseases, vaccina, alcoholism and injuries.)

Name of station.	Mean strength.	Ratios per 1,000 of mean strength.			
		Admissions.	Deaths.	Discharges.	Constantly non-effective.
Kennebec arsenal, Me	15	2,000.00	.....	.....	52.42
Sandy Hook, N. J	58	1,982.77	.....	.....	19.42
Columbia arsenal, Tenn	17	1,682.30	.....	.....	59.47
Springfield Armory, Mass	29	1,827.59	.....	.....	29.86
Washington barracks, D. C	287	1,002.01	3.48	20.91	34.08
Columbus barracks, Ohio	626	1,600.00	9.58	3.20	47.97
Mount Vernon barracks, Ala	177	1,525.41	10.95	28.25	34.34
Fort Myer, Va	259	1,498.00	3.86	27.03	34.44
Frankford arsenal, Pa	43	1,452.38	.....	.....	22.83
David's Island, N. Y	511	1,397.28	3.91	13.70	23.30
Fort Hamilton, N. Y	259	1,355.22	.....	10.31	21.48
Saint Francis barracks, Fla	120	1,310.08	.....	7.75	30.60
Fort Barrancas, Fla	120	1,208.34	8.33	41.67	28.09
Fort Porter, N. Y	113	1,185.84	8.85	8.85	21.08
West Point, N. Y	383	1,078.34	.....	2.61	17.36
Fort Monroe, Va	467	1,072.79	4.28	.....	35.97
Newport barracks, Ky	56	1,017.88	.....	.....	13.79
Fort Wadsworth, N. Y	176	914.78	.....	.....	26.88
Fort McPherson, Ga	419	890.20	.....	7.16	29.48
Fort Schuyler, N. Y	113	858.30	.....	8.85	16.62
Plattsburg barracks, N. Y	58	827.50	.....	17.24	22.34
Watervliet arsenal, N. Y	63	825.40	.....	.....	31.71
Willet's Point, N. Y	370	824.32	.....	.....	18.29
Key West barracks, Fla	61	819.69	.....	16.39	26.08
Allegheny arsenal, Pa	29	793.10	34.48	.....	38.64
Fort Warren, Mass	113	743.36	8.85	8.85	25.50
Jackson barracks, La	116	732.79	8.62	8.62	22.95
Fort Columbus, N. Y	193	704.65	.....	20.73	25.49
Fort Ontario, N. Y	63	682.54	.....	.....	11.62
Fort Adams, R. I	259	665.88	7.72	7.72	17.99
Fort McHenry, Md	155	645.10	6.45	12.90	26.90

TABLE XI.—*The military posts in each department, showing the rates of admission, death, discharge, and constant noneffectiveness for disease, etc.—Continued.*

DEPARTMENT OF THE EAST—Continued.

[Excluding venereal diseases, vaccina, alcoholism and injuries.]

Name of station.	Mean strength.	Ratios per 1,000 of mean strength.			
		Admissions.	Deaths.	Discharges.	Constantly non-effective.
Augusta arsenal, Ga	25	640.00	40.00	.....	15.01
Fort Preble, Me	62	612.89	.....	.....	19.78
Watertown arsenal, Mass	38	578.94	.....	.....	12.33
Fort Thomas, Ky	368	573.37	2.72	8.15	13.83
Madison barracks, N. Y	325	446.15	3.07	.....	15.54
Fort Trumbull, Conn	64	406.25	15.62	.....	12.67
Fort Niagara, N. Y	219	397.26	4.57	.....	12.22
New York attending surgeon, N. Y	35	228.57	.....	.....	5.09
Fort Wood, N. J	56	160.72	.....	.....	.42
Field	16	309.50	.....	.....	1.89

DEPARTMENT OF THE MISSOURI.

[Excluding venereal diseases, vaccina, alcoholism and injuries.]

Jefferson barracks, Mo	484	1,342.97	.....	2.07	32.73
Fort Reno, Okla	282	1,312.05	10.64	14.18	42.79
Fort Supply, Okla	221	1,135.76	.....	27.15	30.44
Fort Sill, Okla	310	1,038.70	9.68	12.90	32.04
Fort Leavenworth, Kans	742	1,018.87	1.34	10.78	27.41
Indianapolis arsenal, Ind	24	1,000.00	.....	.....	33.00
Fort Sheridan, Ill	635	935.44	1.57	6.31	19.85
Fort Riley, Kans	581	893.29	3.44	5.16	23.07
Rock Island arsenal, Ill	65	861.56	.....	.....	15.43
Fort Wayne, Mich	246	808.94	4.07	40.65	24.69
Leavenworth Prison, Kans	118	661.03	8.47	8.47	33.97
Fort Brady, Mich	170	658.84	.....	11.77	17.87
Fort Mackinac, Mich	60	283.33	.....	16.67	15.61
Chicago headquarters, Ill	57	210.54	35.09	.....	7.60
Field	174	528.73	.....	.....	6.70

DEPARTMENT OF DAKOTA.

[Excluding venereal diseases, vaccina, alcoholism and injuries.]

Fort Keogh, Mont	450	1,209.16	2.18	10.90	32.95
Fort Yates, N. Dak	267	1,071.15	7.49	11.24	34.08
Fort Meade, S. Dak	412	941.74	.....	21.85	30.09
Fort Assinniboine, Mont	514	834.63	1.95	7.78	20.10
Fort Pembina, N. Dak	59	762.71	.....	16.95	14.81
Fort Snelling, Minn	432	675.93	.....	6.94	23.41
Fort Mission, Mont	199	633.16	.....	20.10	13.96
Camp Poplar River, Mont	75	613.33	.....	13.33	41.23
Fort Buford, N. Dak	285	582.45	3.51	3.51	17.89
Fort Sully, S. Dak	171	543.87	.....	11.70	13.69
Fort Yellowstone, Wyo	100	330.00	.....	10.00	14.55
Fort Custer, Mont	363	192.85	8.26	2.75	7.78
Saint Paul headquarters, Minn	42	190.48	23.81	23.81	15.52
Field	127	779.53	.....	.....	13.14

DEPARTMENT OF THE PLATTE.

[Excluding venereal diseases, vaccina, alcoholism and injuries.]

Fort McKinney, Wyo	276	1,126.81	3.63	3.63	32.76
Fort Niobrara, Nebr	457	1,000.00	8.75	2.19	29.00
Fort Sidney, Nebr	199	959.80	15.07	.....	25.63
Fort Robinson, Nebr	505	829.71	5.94	1.98	16.57
Fort Washakie, Wyo	160	781.25	.....	.....	14.64
Fort D. A. Russell, Wyo	472	684.33	2.12	2.12	20.02
Omaha headquarters, Nebr	36	666.66	.....	.....	13.62
Camp Pilot Butte, Wyo	54	574.07	.....	.....	18.06
Fort Omaha, Nebr	469	520.25	4.26	21.32	18.41
Field	37	540.54	.....	.....	8.71

TABLE XI.—The military posts in each department, showing the rates of admission, death, discharge, and constant noneffectiveness for disease, etc.—Continued.

DEPARTMENT OF TEXAS.

[Excluding venereal diseases, vaccina, alcoholism and injuries.]

Name of station.	Mean strength.	Ratios per 1,000 of mean strength.			
		Admis-sions.	Deaths.	Dis-charges.	Con-stantly non-effective.
Fort Bliss, Tex.....	155	1,787.10	12.90	.....	36.56
Fort Clark, Tex.....	314	1,729.29	3.19	6.38	60.45
Camp Eagle Pass, Tex.....	56	1,642.85	.....	.....	47.86
Fort Ringgold, Tex.....	149	1,422.83	13.42	6.71	16.57
Fort Brown, Tex.....	83	1,409.65	.....	.....	34.39
Fort Hancock, Tex.....	53	1,150.94	.....	.....	20.57
Fort Sam Houston, Tex.....	501	996.01	5.99	11.97	25.89
Fort McIntosh, Tex.....	165	721.22	6.06	12.12	34.47
San Antonio headquarters, Tex.....	34	176.46	58.82	.....	13.54
Field.....	223	511.22	.....	.....	8.96

DEPARTMENT OF THE COLORADO.

[Excluding venereal diseases, vaccina, alcoholism and injuries.]

Whipple barracks, Ariz.....	232	1,107.77	.....	17.24	37.71
Fort Wingate, N. Mex.....	351	1,045.59	.....	2.85	29.70
Fort Huachuca, Ariz.....	292	1,041.10	3.42	10.27	30.17
Fort Grant, Ariz.....	291	1,037.80	.....	17.18	30.55
Fort Douglas, Utah.....	544	867.65	3.67	12.87	19.81
Fort Marcy, N. Mex.....	165	854.55	.....	24.24	32.02
Fort Apache, Ariz.....	230	839.13	.....	8.70	17.57
Fort DuChesne, Utah.....	120	741.67	.....	8.33	15.53
Fort Logan, Colo.....	359	738.17	5.57	8.36	21.55
Fort Bayard, N. Mex.....	336	633.92	8.92	11.90	20.51
Fort Bowie, Ariz.....	110	627.28	.....	45.45	28.09
San Carlos, Ariz.....	175	560.01	.....	.....	16.38
Fort Stanton, N. Mex.....	107	542.05	.....	18.69	12.49
Denver headquarters, Colo.....	12	500.00	.....	.....	7.08
Field.....	134	567.16	7.46	.....	7.96

DEPARTMENT OF CALIFORNIA.

[Excluding venereal diseases, vaccina, alcoholism and injuries.]

Fort Bidwell, Cal.....	47	1,106.38	.....	21.28	27.69
San Diego barracks, Cal.....	66	1,106.06	.....	30.30	39.85
Presidio of San Francisco, Cal.....	490	724.49	2.04	10.21	19.98
Angel Island, Cal.....	299	581.94	10.03	13.38	25.66
Alcatraz Island, Cal.....	118	491.54	16.95	8.47	12.00
Fort Mason, Cal.....	62	451.61	.....	.....	12.95
Benicia barracks, Cal.....	212	438.69	4.72	23.58	14.23
San Francisco headquarters, Cal.....	44	45.45	.....	.....	5.96
Field.....	52	538.46	.....	.....	9.79

DEPARTMENT OF THE COLUMBIA.

[Excluding venereal diseases, vaccina, alcoholism and injuries.]

Fort Walla Walla, Wash.....	189	994.71	5.29	31.75	35.89
Fort Townsend, Wash.....	64	531.25	.....	.....	11.43
Boise barracks, Idaho.....	109	522.95	.....	18.35	11.03
Fort Sherman, Idaho.....	307	475.57	.....	3.26	13.89
Fort Canby, Wash.....	106	424.53	9.43	9.43	10.99
Vancouver barracks, Wash.....	440	379.55	4.55	13.64	9.52
Fort Spokane, Wash.....	141	340.42	.....	7.09	11.96
Field.....	26	730.77	.....	.....	5.58

TABLE XII.—The monthly prevalence of disease among the white, negro, and Indian troops of the Army during the year 1898.

Month.		Mean strength.	Admitted to sick report.						Constantly non-effective.					
			Number.			Ratio per 1,000 of mean strength.			Days.			Ratio per 1,000 of mean strength.		
			Veneral, alcoholism, and injuries.	Other diseases.	All diseases and injuries.	Veneral, alcoholism, and injuries.	Other diseases.		Veneral, alcoholism, and injuries.	Other diseases.	All diseases and injuries.	Veneral, alcoholism, and injuries.	Other diseases.	All diseases and injuries.
Jan...	W.	23,300	603	1,721	2,280	26.12	77.52	197.64	9,519	18,000	28,281	12.05	27.41	41.24
	M.	2,202	63	186	249	26.52	62.67	98.10	843	1,181	2,034	12.26	17.20	26.08
	T.	790	19	86	49	24.85	27.97	62.02	133	450	613	6.23	18.70	25.08
Feb...	W.	23,196	783	1,800	2,443	26.69	74.87	194.86	10,510	20,508	31,018	12.48	28.26	39.71
	M.	2,400	800	1,820	2,410	26.26	81.00	197.20	9,204	18,979	28,723	12.04	28.33	42.87
	T.	2,212	66	170	226	26.85	78.89	199.74	891	1,414	2,323	14.30	23.12	37.31
Mar...	W.	23,442	875	2,033	2,708	26.53	79.91	198.44	9,296	20,519	29,816	12.05	28.90	41.00
	M.	2,301	613	2,335	2,848	27.12	88.98	120.08	9,169	21,718	29,820	12.00	21.01	44.01
	T.	2,145	51	307	266	22.78	66.80	120.20	822	1,743	2,565	12.26	28.21	38.80
Apr...	W.	23,635	897	2,512	2,305	27.10	68.41	120.61	10,225	24,202	34,377	12.05	26.37	42.63
	M.	2,148	610	1,770	2,432	26.48	69.23	120.81	9,150	19,800	28,956	12.78	29.10	42.08
	T.	2,120	47	123	170	22.11	67.86	79.84	820	1,244	1,972	9.83	21.07	30.93
May...	W.	23,654	730	1,649	2,074	26.97	77.73	106.71	10,112	21,947	32,059	12.43	29.10	42.64
	M.	2,123	700	1,800	2,200	21.54	79.73	102.28	9,014	17,784	27,003	14.43	23.08	40.20
	T.	2,109	60	121	181	26.43	67.87	86.62	748	1,244	2,002	11.44	20.50	32.00
June...	W.	23,688	780	1,748	2,423	21.92	69.04	101.00	11,156	18,720	29,876	14.30	26.20	39.73
	M.	2,102	764	1,800	2,073	22.10	62.43	84.82	9,419	14,472	23,891	14.31	22.00	36.31
	T.	2,186	66	119	171	26.62	62.61	79.29	802	1,130	1,932	12.23	17.17	29.40
July...	W.	23,803	774	1,519	2,290	21.14	61.13	89.26	10,440	18,140	28,580	14.01	21.00	35.07
	M.	2,179	710	1,723	2,443	22.00	62.43	84.82	9,419	14,472	23,891	14.31	22.00	36.31
	T.	2,167	62	130	192	26.24	66.80	86.20	700	1,213	1,913	11.81	18.22	30.08
Aug...	W.	23,802	800	1,801	2,000	22.66	78.20	100.64	11,017	18,907	29,924	14.43	24.88	39.31
	M.	2,180	610	1,830	2,310	29.91	88.88	112.80	9,180	18,880	27,764	13.32	27.03	40.37
	T.	2,121	74	164	218	24.76	67.60	102.20	700	1,104	1,804	11.00	19.71	29.22
Sept...	W.	23,806	703	2,003	2,703	20.43	81.26	111.00	10,126	18,807	28,933	12.00	26.78	38.81
	M.	2,100	603	1,780	2,441	28.32	80.23	100.00	9,100	17,802	27,000	13.73	26.79	40.52
	T.	2,004	60	180	190	20.00	68.20	92.20	843	1,220	2,100	12.70	20.48	33.24
Oct...	W.	23,800	702	1,800	2,004	29.39	78.77	108.15	10,202	18,530	28,732	12.87	29.14	40.00
	M.	2,103	600	1,654	2,343	29.02	67.70	87.72	10,404	17,807	28,261	14.74	26.11	39.80
	T.	2,110	48	120	168	21.72	54.20	79.02	810	1,200	2,170	11.91	19.54	31.75
Nov...	W.	23,786	737	1,603	2,400	29.20	66.06	89.01	11,010	19,841	31,391	14.82	24.87	39.10
	M.	2,106	610	2,077	2,736	27.91	89.81	117.20	10,116	18,864	28,980	14.50	28.00	41.00
	T.	2,113	49	117	166	28.17	66.23	78.49	804	1,085	1,700	10.78	17.10	27.88
Dec...	W.	23,213	694	2,001	2,695	27.31	86.78	116.00	9,800	20,000	30,800	12.79	28.00	41.00
	M.	2,132	44	121	216	29.00	66.84	110.17	801	1,470	2,161	10.45	22.23	32.60
	T.	2,075	15	83	47	23.86	60.87	74.73	238	320	554	17.23	18.72	34.00
Year.	W.	23,975	603	2,204	2,977	26.88	67.08	114.01	10,006	22,422	32,428	12.80	27.84	41.00
	M.	2,149	600	1,700	2,350	218.71	704.21	112.03	9,414	18,000	27,414	12.94	19.07	32.01
	T.	2,113	205	460	723	270.00	640.00	1,011.10	2,870	8,000	10,870	12.70	23.43	36.13

TABLE XIII.—Showing for the Army the ratios, per 1,000 of mean strength, of admissions to sick report, deaths, discharges, and constant noneffectiveness for the decade 1882 to 1891.

Troops.	White.			Negro.			Total.		
Mean strength (corrected for time).	21, 641.			2, 279.			23, 950.		
	Admissions.	Deaths.	Discharges.	Admissions.	Deaths.	Discharges.	Admissions.	Deaths.	Discharges.
Causes of admission to sick report.									
Enteric fever (including typhomalarial).....	7.37	.90	.05	4.04	1.12	.....	7.04	.92	.05
Other specific contagious and infectious diseases (including erysipelas and tonsillitis).....	91.78	.26	.03	125.60	.16	.....	94.91	.25	.03
Malarial fevers and resulting conditions.....	128.70	.20	.16	133.50	.40	.12	129.05	.22	.15
Diarrhea (including cholera morbus).....	140.89	.07	.24	143.72	.....	.20	141.05	.06	.23
Dysentery.....	9.44	.14	.18	14.70	.28	.12	9.93	.15	.17
Other miasmatic diseases.....	.04	.03	.....	.09	.08	.....	.05	.03	.....
Gonorrhea and results.....	34.56	.....	.27	34.92	.....	.08	34.61	.....	.25
Syphilis and results.....	31.51	.02	3.05	44.57	.....	4.27	32.76	.02	3.17
Other venereal diseases.....	8.31	.....	.10	9.17	.....	.12	8.35	.....	.10
Vaccina.....	21.68	.....	.004	18.47	.....	.....	22.05	.....	.004
Other enthetic diseases.....	2.39	.01	.02	3.11	.....	.....	2.46	.01	.03
Alcoholism.....	55.46	.22	.30	3.95	.....	.04	50.50	.20	.27
Other dietic diseases.....	.65	.01	.08	.18	.....	.04	.61	.01	.07
Rheumatism (including muscular).....	93.19	.04	2.61	133.33	.04	2.83	96.97	.04	2.63
Other constitutional diseases.....	9.08	.14	.50	11.05	.32	1.04	9.29	.16	.55
Developmental diseases.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Parasitic diseases.....	3.48	.....	.....	1.36	.....	.....	3.27	.....	.....
Headache and neuralgia.....	70.35	.....	.34	104.72	.....	.40	73.58	.....	.34
Other diseases of the nervous system.....	11.62	.54	3.77	9.43	.36	2.99	11.41	.52	3.70
Diseases of the eye.....	20.91	.....	1.28	31.89	.....	1.44	21.98	.....	1.29
Diseases of the ear.....	8.86	.01	.84	3.73	.....	.28	8.39	.01	.79
Catarrhs and common colds.....	63.26	.....	.04	80.01	.....	.....	64.77	.....	.03
Bronchitis.....	70.82	.08	.43	77.82	.....	.24	71.51	.07	.41
Pneumonia.....	4.17	.69	.10	8.07	1.79	.20	4.55	.79	.11
Pulmonary phthisis.....	3.16	.50	1.84	4.34	.80	2.35	3.28	.53	1.89
Pleuritis.....	2.70	.02	.08	6.01	.04	.12	3.02	.02	.08
Other diseases of the respiratory system.....	7.55	.08	.45	12.68	.20	.28	8.04	.09	.44
Diseases of the heart and valves.....	2.77	.28	1.37	3.07	.20	1.16	2.80	.27	1.34
Other diseases of the circulatory system.....	5.42	.34	1.03	3.11	.52	.52	5.20	.36	.98
Dyspepsia, colic, and constipation.....	65.82	.....	.23	88.65	.....	.20	68.05	.....	.23
Other diseases of the digestive system (excluding tonsillitis and hernia).....	58.16	.59	.66	68.13	.20	.60	59.03	.55	.65
Diseases of the kidneys.....	1.77	.27	.32	1.75	.24	.52	1.77	.27	.34
Other diseases of the genito-urinary system (nonvenereal).....	16.27	.04	1.26	21.27	.....	1.67	16.75	.04	1.30
Diseases of the locomotor system (excluding muscular rheumatism).....	5.86	.004	1.28	6.62	.08	1.40	5.92	.01	1.29
Diseases of the integumentary system.....	90.40	.01	.36	65.98	.....	.28	88.14	.01	.35
All other diseases.....	13.51	.03	1.01	17.99	.08	.56	13.95	.04	.97
Heat stroke.....	2.08	.02	.02	.53	.....	.04	1.93	.02	.03
Frostbite and general freezing.....	4.00	.07	.07	23.12	.04	.32	5.82	.07	.09
Contusions and sprains.....	140.07	.02	.46	159.29	.04	.48	141.95	.02	.46
Dislocations.....	2.50	.004	.14	2.11	.....	.12	2.47	.004	.14
Fractures (not gunshot).....	7.05	.11	.74	5.26	.16	.48	6.88	.11	.71
Incised, lacerated, contused, and punctured wounds.....	41.13	.12	.27	62.16	.08	.32	43.14	.11	.27
Shot wounds.....	4.14	1.17	.91	9.21	1.71	1.40	4.62	1.23	.95
All other injuries (including hernia).....	42.33	1.35	2.00	41.24	.76	1.67	42.28	1.29	1.96
Total for disease.....	1, 161.88	5.53	24.25	1, 297.09	6.90	24.04	1, 175.10	5.65	24.21
Total for injuries.....	243.29	2.86	4.59	302.92	2.79	4.82	249.10	2.86	4.61
Total for all causes.....	1, 405.17	8.39	28.85	1, 600.00	9.69	28.86	1, 424.20	8.51	28.82

TABLE XIII.—Showing for the Army the ratios, per 1,000 of mean strength, of admissions to sick report, deaths, discharges, and constant noneffectiveness, for the year 1893.

Troops.	White.				Negro.				Indian.				Total.			
	22,429.				2,143.				715.				25,287.			
	Admissions.	Deaths.	Discharges.	Constantly non-effect. live.	Admissions.	Deaths.	Discharges.	Constantly non-effect. live.	Admissions.	Deaths.	Discharges.	Constantly non-effect. live.	Admissions.	Deaths.	Discharges.	Constantly non-effect. live.
Enteric fever (including typhomalarial).....	7.04	.65	.....	1.32	1.40	.42	.....	.20	1.40	.....	.....	.06	0.41	.61	.....	1.19
Other specific, contagious, and infectious diseases.....	185.59	.37	.04	3.30	172.65	.85	.....	2.81	110.08	.....	.....	2.22	164.78	.40	.04	3.31
.....	99.87	.....	.....	2.01	47.60	.85	.....	1.52	36.35	.....	.....	.39	83.84	.07	.....	2.45
.....	101.48	.....	.04	.80	48.00	.....	.....	.41	32.17	.....	.....	.54	94.88	.....	.04	.84
.....	3.34	.04	.04	.11	6.07	.....	.....	.31	.....	.....	.....	.02	3.48	.04	.04	.12
Other miasmatic diseases.....	.09	.04	.....	.01	.47	.43	.....	.24	.....	.....	.....	.....	.12	.07	.....	.03
Gonorrhoea and results.....	41.24	.....	.33	2.60	24.73	.....	.....	1.46	54.55	.....	.....	3.08	40.22	.....	.29	2.43
Syphilis and results.....	14.04	.....	1.42	1.63	7.47	.....	1.60	1.20	20.98	.....	6.83	2.37	13.68	.....	1.59	1.63
Other venereal diseases.....	19.63	.....	.04	1.40	16.80	.....	.....	1.13	11.19	.....	.....	.64	10.18	.....	.04	1.30
Vaccina.....	45.48	.....	.....	1.25	41.07	.....	.....	.83	20.98	.....	.....	.41	44.41	.....	.....	1.19
Other enthetic diseases.....	1.74	.....	.....	.08	1.40	.....	.....	.32	.....	.....	.....	.....	1.00	.....	.....	.10
Alcoholism.....	37.23	.41	.....	.41	7.47	.....	.....	.09	11.19	.....	.....	.....	33.97	.86	.....	.37
Other dietetic diseases.....	.67	.....	.....	.09	.....	.....	.....	.....	1.40	.....	.....	.02	.03	.....	.....	.08
Rheumatism (including muscular).....	64.52	.....	.90	3.19	91.93	.....	1.27	3.63	29.37	.....	1.37	1.12	65.54	.....	.94	3.17
Other constitutional diseases.....	2.88	.16	.12	.29	1.67	.....	.42	.26	11.10	.....	2.73	2.78	3.92	.14	.23	.36
Developmental diseases.....	54	.....	.41	.03	.93	.....	.....	.06	.....	.....	.....	.....	.56	.....	.36	.03
Parasitic diseases.....	2.23	.....	.....	.00	1.40	.....	.....	.03	.....	.....	.....	.....	2.10	.....	.....	.06
Headache and neuralgia.....	35.18	.....	.16	.74	33.13	.....	.....	.57	28.37	.....	.....	.26	34.84	.....	.14	.71
Other diseases of the nervous system.....	7.36	.08	1.07	.92	6.60	.85	1.27	.35	2.80	.....	.....	.25	7.08	.14	1.59	.86
Diseases of the eye.....	15.03	.....	.96	.74	14.47	.....	.....	.74	81.12	.....	.....	3.45	16.85	.....	.87	.83
Diseases of the ear.....	7.94	.....	.65	.37	4.07	.....	.....	.20	1.40	.....	.....	.01	7.47	.....	.68	.35
Cataracts and common colds.....	33.02	.....	.....	.50	37.80	.....	.....	.36	9.79	.....	.....	.06	69.91	.....	.....	.33
Bronchitis.....	60.00	.....	.20	1.35	59.73	.....	.....	.99	40.58	.....	.....	.57	67.47	.....	.18	1.30
Pneumonia.....	4.10	.65	.08	.48	2.80	.....	.....	.37	11.19	2.73	.....	.65	4.27	.65	.07	.49
Pulmonary phthisis.....	2.32	.45	1.30	.74	2.31	.42	1.27	.46	20.98	6.83	12.30	2.67	2.85	.61	1.59	.77
Pleuritis.....	2.01	.....	.....	.16	2.80	.....	.....	.14	1.40	.....	.....	.11	2.06	.....	.....	.19
Other diseases of the respiratory system.....	4.28	.....	.16	.21	5.60	.....	.....	.23	8.30	.....	.....	.36	4.51	.....	.14	.23
.....	5.80	.24	1.22	.70	1.40	.....	.....	.06	4.30	.....	2.73	.39	5.38	.22	1.16	.63
.....	.62	.04	.20	.16	.47	.....	.....	.001	.....	.....	.....	.....	.59	.04	.19	.14
.....	53.73	.....	.16	.03	56.00	.....	.....	.69	34.97	.....	.....	.80	53.89	.....	.14	.62
.....	61.62	.24	.41	1.51	52.27	.....	.....	1.12	44.75	.....	.....	1.43	60.30	.22	.36	1.47
.....	1.60	.37	.16	.27	2.33	.85	.....	.16	1.70	.....	.....	.....	1.70	.40	.14	.26

TABLE XIII.—Showing for the Army the ratios, per 1,000 of mean strength, of admissions to sick report, death, discharges, etc.—Continued.

Troops.	White.				Negro.				Indian.				Total.			
	22,450.				2,148.				715.				25,287.			
Mean strength (corrected for time).	Admissions.	Deaths.	Discharges.	Constantly non-effective.	Admissions.	Deaths.	Discharges.	Constantly non-effective.	Admissions.	Deaths.	Discharges.	Constantly non-effective.	Admissions.	Deaths.	Discharges.	Constantly non-effective.
Causes of admission to sick report.																
Other diseases of the genito-urinary system (non venereal).....	12.88	.....	.49	.72	10.27	.....	.42	.64	13.90	.....	1.37	.51	12.69	.....	.51	.71
(exclud-																
hem.	5.53	.....	.35	.53	7.00	.....	.35	.55	2.80	.....	.....	.13	5.56	.....	.33	.53
All other diseases.....	35.34	.....	.16	2.03	43.53	.....	.42	.90	64.33	.....	.....	1.45	81.62	.....	.18	1.93
Heat stroke.....	27.29	.04	.16	1.10	32.20	.....	.....	.85	20.96	.....	.....	1.06	27.62	.04	.14	1.08
Frostbite and general freezing.....	1.78	.04	.....	.02	1.40	.....	.....	.06	.....	.....	.....	.....	1.70	.04	.....	.03
Contusions and sprains.....	1.52	.04	.04	.11	15.40	.....	.....	.44	1.40	.....	.....	.04	2.09	.04	.04	.13
Dislocations.....	128.32	.....	.20	3.17	141.89	.....	.....	2.04	113.29	.....	.....	1.90	129.00	.....	.18	3.12
Fractures (not gunshot).....	2.14	.....	.04	.15	2.33	.....	.....	.11	5.59	.....	.....	.52	2.25	.....	.04	.16
Inclosed, lacerated, contused, and punctured wounds.....	6.84	.16	.45	1.14	7.47	.....	.43	1.34	12.69	2.73	.....	1.07	6.98	.22	.43	1.16
Shot wounds.....	51.54	.04	.13	1.43	47.90	.....	.35	1.25	97.20	.....	.....	2.39	52.52	.04	.16	1.44
All other injuries (including hernia).....	2.99	.73	.49	.47	6.53	2.12	.43	.73	4.20	2.73	.....	.29	3.32	.90	.47	.49
Total for disease.....	45.86	1.79	1.26	1.41	40.13	.85	.85	1.17	38.86	.....	1.37	1.20	44.93	1.66	1.23	1.39
Total for injuries.....	1,074.15	3.79	12.37	33.18	850.88	4.46	7.63	23.88	739.86	9.56	27.32	27.72	1,045.76	4.01	12.36	32.24
Total for all causes.....	240.58	2.81	2.61	7.91	262.25	2.97	2.54	8.15	371.33	5.46	1.37	7.41	243.29	2.89	2.57	7.93
	1,314.73	6.59	14.98	41.09	1,112.93	7.43	10.17	32.01	1,011.19	15.03	28.69	35.13	1,289.04	6.91	14.93	40.15

TABLE XIII.—Showing for each department and for the Army the ratios, per 1,000 of mean strength, of admissions to sick report, deaths, discharges, and constant non-effectiveness for the year 1893.

Names of departments.....	Department of the East.				Department of the Missouri.				Department of Dakota.			
Mean strength (corrected for time).	6,944.				4,169.				3,505.			
Causes of admission to sick report.	Admissions.	Deaths.	Discharges.	Constantly non-effective.	Admissions.	Deaths.	Discharges.	Constantly non-effective.	Admissions.	Deaths.	Discharges.	Constantly non-effective.
Enteric fever (including typhomalarial)	6.05	.58	.....	1.16	9.59	.72	.....	1.72	.57	.....	.....	.10
Other specific contagious and infectious diseases (including erysipelas and tonsillitis) ..	163.74	.58	.....	3.98	154.24	.72	.24	2.96	213.70	.57	.....	3.66
Malarial fevers and resulting conditions	141.42	.....	.....	2.90	160.95	.....	.....	3.54	10.84	.....	.....	.26
Diarrhea, including cholera morbus	102.39	.....	.....	.92	132.16	.....	.....	1.12	78.17	.....	.....	.76
Dysentery	2.45	.....	.....	.07	6.96	.....	.....	.07	4.28	.....	.29	.23
Other miasmatic diseases .....	.14	.....	.....	.04	.....	.....	.....	.....	.29	.29	.....	.15
Gonorrhea and results	51.99	.....	.43	2.96	39.82	.....	.72	2.88	22.54	.....	.....	1.34
Syphilis and results	18.43	.....	1.58	2.12	12.23	.....	1.92	.87	6.85	.....	2.00	1.14
Other venereal diseases	29.95	.....	.14	2.14	16.31	.....	.....	1.13	6.56	.....	.....	.40
Vaccina	100.67	.....	.....	3.02	34.54	.....	.....	.80	31.67	.....	.....	.71
Other enthetic diseases	1.44	.....	.....	.06	.48	.....	.....	.07	.29	.....	.....	.01
Alcoholism	45.51	.14	.....	.53	26.15	.....	.....	.27	19.97	.86	.....	.22
Other dietetic diseases .....	.29	.....	.....	.01	.72	.....	.....	.02	1.14	.....	.....	.05
Rheumatism (including muscular)	72.44	.....	.58	2.66	61.17	.....	.24	2.31	66.76	.....	.57	2.75
Other constitutional diseases ..	4.75	.14	.43	.38	4.30	.24	.....	.30	2.85	.29	.29	.76
Developmental diseases .....	.43	.....	.43	.02	.96	.....	.48	.06	.29	.....	.29	.01
Parasitic diseases	2.59	.....	.....	.08	1.44	.....	.....	.04	.57	.....	.....	.02
Headache and neuralgia	45.22	.....	.14	.74	30.22	.....	.....	.55	26.82	.....	.....	.34
Other diseases of the nervous system	7.63	.14	.58	1.05	7.68	.....	.48	1.03	6.85	.29	.57	.73
Diseases of the eye	14.98	.....	.43	.48	21.59	.....	.96	1.24	15.12	.....	.57	1.19
Diseases of the ear	8.50	.....	.58	.41	8.64	.....	1.68	.43	4.28	.....	.86	.41
Catarrhs and common colds	112.04	.....	.....	.93	36.94	.....	.....	.29	31.38	.....	.....	.36
Bronchitis	66.39	.....	.14	1.52	66.92	.....	.24	1.21	70.47	.....	.....	1.56
Pneumonia	4.46	1.01	.14	.66	4.80	.72	.....	.46	3.99	.....	.29	.69
Pulmonary phthisis	2.16	1.01	1.58	.63	2.88	.24	1.44	.60	2.00	.29	1.71	.37
Pleuritis	1.30	.....	.....	.17	2.88	.....	.....	.21	2.00	.....	.....	.12
Other diseases of the respiratory system	3.17	.....	.14	.11	4.32	.....	.24	.26	4.28	.....	.....	.25
Diseases of the heart and valves ..	5.18	.14	1.73	.64	4.80	.....	2.16	.58	6.85	.....	.86	1.04
Other diseases of the circulatory system .....	.43	.....	.29	.08	.72	.24	.....	.06	.57	.....	.29	.03
Dyspepsia, colic, and constipation	56.88	.....	.14	.59	50.37	.....	.....	.54	40.23	.....	.....	.56
Other diseases of the digestive system (excluding tonsillitis and hernia)	80.79	.14	.58	1.73	45.81	.....	.....	1.23	55.92	.29	.57	1.33
Diseases of the kidneys .....	.86	.29	.29	.08	2.88	.48	.48	.26	3.99	.57	.....	.29
Other diseases of the genitourinary system (nonvenereal)	10.37	.....	.29	.51	13.67	.....	.96	.87	8.84	.....	1.43	.43
Diseases of the locomotor system (excluding muscular rheumatism)	4.75	.....	.96	.26	5.52	.....	.72	.35	5.71	.....	1.43	.74
Diseases of the integumentary system	95.62	.....	.14	2.19	104.10	.....	.24	2.43	55.35	.....	.29	1.63
All other diseases	23.04	.14	.29	.82	24.47	.....	.....	1.21	28.82	.....	.....	1.40
Heat stroke	1.58	.....	.....	.02	3.60	.24	.....	.05	1.71	.....	.....	.07
Frostbite and general freezing ..	1.15	.14	.....	.06	1.92	.....	.....	.04	12.55	.....	.....	.47
Contusions and sprains	120.96	.....	.14	2.89	158.32	.....	.....	3.72	121.82	.....	.....	2.74
Dislocations	2.74	.....	.....	.15	2.64	.....	.24	.32	1.71	.....	.....	.09
Fractures (not gunshot)	7.49	.29	.29	1.06	6.48	.24	.24	1.45	8.84	.57	1.14	1.76
Incised, lacerated, contused, and punctured wounds	52.42	.....	.....	1.27	45.57	.....	.....	1.17	53.92	.....	.29	1.60
Shot wounds	2.02	.29	.14	.14	4.32	.48	.48	.69	3.71	1.43	.86	.46
All other injuries (including hernia)	44.93	2.30	.86	1.11	52.05	2.16	1.92	1.77	47.07	1.71	2.28	1.81
Total for disease	1,288.45	4.32	11.95	36.63	1,101.70	3.36	13.19	31.96	840.80	3.42	12.27	26.07
Total for injuries	233.29	3.02	1.44	6.71	274.89	3.12	2.88	9.21	251.35	3.71	4.56	9.02
Total for all causes	1,521.74	7.34	13.39	43.34	1,376.59	6.48	16.07	41.17	1,092.15	7.13	16.83	35.09

TABLE XIII.—Showing for each department and for the Army the ratios, per 1,000 of mean strength, of admissions to sick report, deaths, discharges, and constant non-effectiveness, for the year 1893.

Names of departments	Department of the Platte.				Department of Texas.				Department of the Colorado.			
Mean strength (corrected for time).	2,665.				1,733.				3,458.			
Causes of admission to sick report.	Admissions.	Deaths.	Discharges.	Constantly noneffective.	Admissions.	Deaths.	Discharges.	Constantly noneffective.	Admissions.	Deaths.	Discharges.	Constantly noneffective.
Enteric fever (including typho-malarial)	6.00	1.13	.....	.86	16.73	2.31	.....	2.58	7.23	.29	.....	1.38
Other specific, contagious, and infectious diseases (including erysipelas and tonsillitis)	144.83	.38	.....	2.51	252.16	.....	.....	5.54	128.39	.....	.....	2.21
Malarial fevers and resulting conditions	34.90	.....	.....	1.13	143.68	.....	.....	6.27	77.79	.58	.....	2.93
Diarrhea (including cholera morbus)	50.28	.....	.....	.50	185.80	.....	.....	1.63	86.46	.....	.....	.63
Dysentery .....	.38	.....	.....	.01	8.66	.....	.....	.33	1.45	.....	.....	.05
Other miasmatic diseases .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.20	.....	.....
Gonorrhea and results	32.65	.....	.....	1.70	59.43	.....	.58	3.74	33.26	.....	.....	1.77
Syphilis and results	7.50	.....	1.13	1.34	27.70	.....	3.46	2.96	10.99	.....	.87	1.13
Other venereal diseases	10.51	.....	.....	.47	40.97	.....	.....	3.31	13.30	.....	.....	1.03
Vaccina	24.01	.....	.....	.44	13.27	.....	.....	.32	14.46	.....	.....	.24
Other onthetic diseases	1.50	.....	.....	.03	8.66	.....	.....	.54	1.73	.....	.....	.16
Alcoholism	48.41	.....	.....	.60	24.81	.58	.....	.29	32.39	.58	.....	.33
Other dietic diseases	1.50	.....	.....	.17	.....	.....	.....	.....	.58	.....	.....	.17
Rheumatism (including muscular)	80.30	.....	.38	2.95	51.36	.....	.58	2.33	72.30	.....	2.31	3.38
Other constitutional diseases	4.50	.....	.....	.39	3.46	.....	.....	.07	2.89	.....	.29	.16
Developmental diseases .....	.....	.....	.....	.....	1.15	.....	.....	.11	1.16	.....	.58	.06
Parasitic diseases	1.13	.....	.....	.01	5.77	.....	.....	.09	2.89	.....	.....	.06
Headache and neuralgia	36.77	.....	.....	.58	45.01	.....	.....	.58	34.99	.....	.....	.86
Other diseases of the nervous system	7.13	.38	.38	.50	5.77	.....	.58	.67	6.36	.29	1.16	.40
Diseases of the eye	26.64	.....	1.50	1.14	13.85	.....	.58	.89	17.06	.....	1.73	.73
Diseases of the ear	9.01	.....	.38	.26	8.66	.....	.....	.12	6.36	.....	.....	.23
Catarrhs and common colds	77.30	.....	.....	.74	9.81	.....	.....	.07	43.38	.....	.....	.49
Bronchitis	73.92	.....	.....	1.27	51.93	.....	.....	.71	86.18	.....	.....	1.27
Pneumonia	6.38	2.25	.....	.47	2.89	.58	.....	.06	4.84	.....	.....	.41
Pulmonary phthisis	3.38	.75	1.50	.76	3.46	1.73	.58	1.43	4.05	.58	3.18	1.38
Pleuritis	1.13	.....	.....	.08	1.15	.....	.....	.03	3.18	.....	.....	.12
Other diseases of the respiratory system	6.73	.....	.....	.41	1.73	.....	.....	.15	8.68	.....	.29	.28
Diseases of the heart and valves	5.25	.....	.75	.45	7.50	1.15	1.15	.71	4.05	.....	.87	.43
Other diseases of the circulatory system .....	.....	.....	.....	.12	.58	.....	.....	.02	.29	.....	.29	.24
Dyspepsia, colic, and constipation	46.15	.....	.....	.59	92.32	.....	.58	1.50	68.83	.....	.....	.63
Other diseases of the digestive system (excluding tonsillitis and hernia)	67.17	.....	.....	1.28	45.59	.58	1.15	2.19	56.10	.29	.....	1.33
Diseases of the kidneys	1.50	.38	.....	.24	.....	.....	.....	.....	1.16	.29	.....	.34
Other diseases of the genito-urinary system (nonvenereal)	17.26	.....	.....	1.26	14.43	.....	.58	.77	13.01	.....	.29	.56
Diseases of the locomotor system (excluding muscular rheumatism)	6.38	.....	.38	.81	6.35	.....	.58	.29	6.36	.....	.29	.62
Diseases of the integumentary system	68.30	.....	.....	1.51	113.10	.....	.....	2.37	63.62	.....	.29	1.35
All other diseases	20.64	.....	.....	.74	75.59	.....	.....	2.17	81.23	.....	.29	1.01
Heat stroke .....	.....	.....	.....	.....	5.77	.....	.....	.05	.29	.....	.....	.003
Frostbite and general freezing	2.25	.....	.....	.34	.....	.....	.....	.....	.29	.....	.29	.06
Contusions and sprains	124.95	.....	.....	2.46	125.22	.....	.58	3.81	128.68	.....	.29	3.10
Dislocations	2.25	.....	.....	.15	3.46	.....	.....	.24	1.73	.....	.....	.12
Fractures (not gunshot)	7.50	.....	.38	1.27	2.31	.....	2.31	.75	4.92	.29	.....	.58
Incised, lacerated, contused, and punctured wounds	63.04	.38	.75	1.58	55.97	.....	.....	1.64	54.08	.....	.29	1.73
Shot wounds	4.13	1.13	.75	.69	4.62	2.31	1.73	1.18	5.21	2.02	.29	.72
All other injuries (including hernia)	44.65	1.50	.38	1.36	38.08	2.31	1.15	1.44	48.87	.87	1.45	1.56
Total for disease	929.46	5.25	6.38	26.41	1,343.34	6.92	10.89	44.86	946.50	3.18	12.72	28.37
Total for injuries	248.78	3.00	2.25	7.85	235.43	4.62	5.77	9.12	244.07	3.18	2.60	7.92
Total for all causes	1,178.24	8.25	8.63	34.26	1,578.77	11.54	16.16	53.97	1,190.57	6.36	15.33	36.29

TABLE XIII.—Showing, for each department and for the Army the ratios, per 1,000 of mean strength, of admissions to sick report, deaths, discharges, and constant noneffectiveness, for the year 1893.

Names of departments.....	Department of California.				Department of the Columbia.			
Mean strength (corrected for time).	1,390.				1,362.			
Causes of admission to sick report.	Admissions.	Deaths.	Discharges.	Constantly noneffective.	Admissions.	Deaths.	Discharges.	Constantly noneffective.
Enteric fever (including typhomalarial).....	2.88	1.44	.....	.23	2.17	.....	.....	.30
Other specific contagious and infectious diseases (including erysipelas and tonsillitis).....	138.84	.....	.....	2.84	128.70	.72	.....	2.16
Malarial fevers and resulting conditions.....	25.90	.....	.....	.91	20.26	.....	.....	.46
Diarrhea (including cholera morbus).....	43.88	.....	.....	.34	36.18	.....	.....	.24
Dysentery.....	.....	.....	.....	.....	2.89	.....	.....	.04
Other miasmatic diseases.....	.72	.....	.....	.01	.....	.....	.....	.....
Gonorrhea and results.....	47.48	.....	.72	3.13	27.49	.....	.....	1.64
Syphilis and results.....	21.58	.....	2.88	2.82	4.84	.....	.....	.37
Other venereal diseases.....	18.70	.....	.....	1.27	10.13	.....	.....	.77
Vaccina.....	2.88	.....	.....	.05	20.26	.....	.....	.46
Other enthetic diseases.....	1.44	.....	.....	.19	1.45	.....	.....	.02
Alcoholism.....	28.06	.....	.....	.27	27.49	2.17	.....	.17
Other dietetic diseases.....	.72	.....	.....	.14	.....	.....	.....	.....
Rheumatism (including muscular).....	51.80	.....	1.44	1.92	31.84	.....	.....	.97
Other constitutional diseases.....	2.88	.72	.....	.39	2.89	.....	.72	.19
Developmental diseases.....	.....	.....	.72	.....	.....	.....	.72	.....
Parasitic diseases.....	2.88	.....	.....	.13	.....	.....	.....	.....
Headache and neuralgia.....	20.86	.....	1.44	.88	15.19	.....	.....	.26
Other diseases of the nervous system.....	5.76	.....	.72	1.21	7.24	.....	2.17	.71
Diseases of the eye.....	11.51	.....	1.44	.40	5.79	.....	.72	.23
Diseases of the ear.....	7.91	.....	.72	.20	5.06	.....	.....	.49
Catarrhs and common colds.....	44.60	.....	.....	.26	27.49	.....	.....	.18
Bronchitis.....	48.92	.....	1.44	1.15	47.75	.....	.72	.87
Pneumonia.....	2.16	.72	.....	.09	2.17	.....	.....	.16
Pulmonary phthisis.....	1.44	.72	.72	.78	4.34	.....	2.89	.63
Pleuritis.....	.....	.....	.....	.....	5.79	.....	.....	.61
Other diseases of the respiratory system.....	2.16	.....	.....	.03	3.62	.....	.....	.07
Diseases of the heart and valves.....	7.19	.72	.....	.34	3.62	.72	.72	.78
Other diseases of the circulatory system.....	2.16	.....	.....	.78	1.45	.....	.72	.15
Dyspepsia, colic, and constipation.....	33.81	.....	.72	.44	25.33	.....	.....	.19
Other diseases of the digestive system (excluding tonsillitis and hernia).....	37.41	.72	.72	1.02	54.27	.72	.72	1.30
Diseases of the kidneys.....	2.16	.....	.....	.02	.....	.72	.....	.08
Other diseases of the genito-urinary system (nonvenereal).....	19.42	.....	.72	1.01	12.30	.....	.....	.08
Diseases of the locomotor system (excluding muscular rheumatism).....	5.76	.....	1.44	.70	5.06	.....	1.45	.35
Diseases of the integumentary system.....	79.13	.....	.....	1.70	46.31	.....	.72	1.45
All other diseases.....	17.20	.....	.72	.60	10.13	.....	.....	1.03
Heat stroke.....	.....	.....	.....	.....	.....	.....	.....	.....
Frostbite and general freezing.....	.....	.....	.....	.....	.72	.....	.....	.02
Contusions and sprains.....	148.91	.....	1.44	4.61	96.24	.....	.....	2.46
Dislocations.....	.72	.....	.....	.02	1.45	.....	.....	.03
Fractures (not gunshot).....	5.04	.....	.....	.45	11.58	.....	.....	1.72
Incised, lacerated, contused, and punctured wounds.....	44.60	.....	.....	1.10	51.37	.....	.72	1.85
Shot wounds.....	.....	.72	.....	.26	1.45	.72	.....	.09
All other injuries (including hernia).....	35.97	2.16	2.16	.86	26.77	.....	.72	.52
Total for disease.....	740.29	5.04	16.55	27.23	599.13	5.06	12.30	17.99
Total for injuries.....	235.25	2.88	3.60	7.28	189.58	.72	1.45	6.69
Total for all causes.....	975.54	7.91	20.14	34.51	788.71	5.79	13.75	24.68

TABLE XIV.—*The prevalence of specific febrile and acute infectious diseases in the Army of the United States as compared with the army of Great Britain.*

Disease.	United States.			Great Britain.
	1893.	1892.	1882-1891.	1891.
Cerebro-spinal fever.....	.08	.08	.05	.02
Chicken pox.....	.47	.54	.17	.06
Cholera.....	.....	.....	.....	.....
Diphtheria.....	.79	.45	.36	.02
Enteric fever.....	6.41	5.95	7.04	1.10
Influenza.....	81.15	74.08	32.61	19.33
Measles.....	8.07	7.73	3.77	1.06
Mumps.....	13.33	6.16	3.26	.78
Scarlet fever.....	.12	.37	.15	2.17
Smallpox.....	.04	.04	.11	.01
Varioloid.....	.08	.....	.07	3.96
Tonsillitis.....	49.91	41.90	49.45	(*)
Typhus fever.....	.....	.....	.01	.....
Whooping cough.....	.28	.25	.09	.....
Yellow fever.....	.....	.....	.15	.....

* Not enumerated separately.

TABLE XV.—*Distribution of specific febrile diseases, etc., at United States military posts during the year 1893.*

Name of station.	Specific febrile and acute infectious diseases, excluding influenza, erysipelas, and tonsillitis.											Influenza.	Erysipelas.	Tonsillitis, including quinsy.	Aggregate.	Ratio per 1,000 of mean strength.
	Cerebro-spinal fever.	Chicken pox.	Dengue.	Diphtheria.	Kutis fever, including typho-malarial fever.	Measles.	Mumps.	Scarlet fever.	Smallpox.	Whooping cough.	Other infectious diseases.	Total.				
Columbus barracks, Ohio.....						65	88				14	167	3	10	210	335.48
Fort Ringgold, Tex.....			117		4							121			121	812.08
Fort Monroe, Va.....		9			5	61	10		1			89	59		162	846.90
Fort Brown, Tex.....			69									69	1		71	865.42
Jefferson barracks, Mo.....		2			6	1	31			2		41	15	3	58	241.74
Fort Apache, Ariz.....							40					40	3		56	243.48
Fort Buford, N. Dak.....							30					30			49	171.93
Washington barracks, D. C.....					1	7	23					30	9	1	62	210.08
Fort Leavenworth, Kans.....					7	1	14					25	86	2	157	211.59
Fort Keogh, Mont.....				1		1	18	2		1	4	24	124		167	363.53
Whipple barracks, Ariz.....					16		6					22			46	198.28
Fort Myer, Va.....					3		17			1		21	28		52	200.77
Fort McIntosh, Tex.....					18							18			23	133.38
Fort Reno, Okla.....					14		3					17	44		63	223.40
Fort Yates, N. Dak.....				16	1							17	63	1	104	389.51
Fort Robinson, Nebr.....					5	7	1					13	31	1	68	134.65
Fort Omaha, Nebr.....					12							12	36	2	80	170.56
.....					5		7					12	11		20	96.77
.....					1	4	6				1	12	24		37	167.43
.....		1			3	5	1					10	4	8	34	94.71
.....					3	9						10	46		64	203.98
.....					3		6					9	6		15	127.13
.....							8					8	38		49	103.88
Cal.....						5	5			1	1	8	35		108	220.41
.....					3		4					7	74	1	34	116.94
.....					4	3						7		5	126	186.43
.....					1		4					6			26	120.55
.....					1					1		6	9		17	144.07
.....					3	3						6	12		73	174.22
.....				1	1	4						6	49		61	165.78
.....					5		1					5			15	44.15
.....					4							5			46	168.57
.....					1							5	18		33	187.50
.....					1	4						5	27		41	166.57
.....					1	4	1					5	37		69	174.17
.....					2	1	1					4	13	1	89	

Fort Assiniboine, Mont.....	2	12	189	20	162	204	337	3	3	7	23	942	2,052	53	1,202	4,329	146	284.06
Fort Bliss, Tex.....																	89	574.10
Fort Huachuca, Ariz.....																	72	240.58
Vancouver barracks, Wash.....																	47	106.82
																	41	206.03
																	30	116.83
																	20	344.83
																	25	81.43
																	26	134.72
																	14	120.69
																	23	143.75
																	29	163.49
																	13	309.62
																	15	297.80
																	20	181.87
																	18	620.60
																	10	153.85
																	8	125.00
																	7	112.90
																	6	410.67
																	4	111.11
																	4	137.83
																	3	125.00
																	4	106.26
																	2	52.20
																	3	85.71
																	5	22.83
																	2	47.62
																	3	53.57
																	30	89.29
																	1	29.41
																	1	22.73
																	3	28.90
																	30	85.47
																	13	120.00
																	7	45.10
																	3	47.02
																	3	28.04
																	2	42.55
																	2	57.74
																	2	82.79
																	2	28.97
Total.....	2	12	189	20	162	204	337	3	3	7	23	942	2,052	53	1,202	4,329		
Admission rates per 1,000 of strength.....	06	.47	7.47	.79	6.41	8.07	13.33	.12	.13	.28	.91	38.11	81.15	2.10	49.11	171.19		

Fort Stanton, N. Mex.
Fort Bidwell, Cal.
Fort Hancock, Tex.
Key West barracks, Fla.
Camp Poplar River, Mont.

Admission rates per 1,000 of strength.....

TABLE XVI.—Twenty posts giving the highest admission rates for malarial diseases, rheumatism, diarrheal and venereal diseases, respectively, during 1895.

I.—MALARIAL DISEASES.

Name of station.	Mean strength.	Ratios per 1,000 of mean strength.			
		Admis- sions.	Deaths.	Dis- charges for dis- ability.	Con- stantly non- effective.
Washington barracks, D. C.....	287	853.66	.....	.....	11.80
Fort Myer, Va.....	259	640.93	.....	.....	10.09
Jefferson barracks, Mo.....	484	522.73	.....	.....	10.05
Fort Bliss, Tex.....	155	447.42	.....	.....	11.15
Fort Hamilton, N. Y.....	259	359.07	.....	.....	4.28
Mount Vernon barracks, Ala.....	177	344.63	.....	.....	4.52
Fort Clark, Tex.....	314	334.39	.....	.....	19.53
Fort Sill, Okla.....	310	296.78	.....	.....	4.45
Fort Huachuca, Ariz.....	292	270.55	.....	.....	12.35
Fort Barrancas, Fla.....	120	266.67	.....	.....	4.79
Fort Grant, Ariz.....	291	216.50	.....	.....	7.54
Fort Reno, Okla.....	282	216.31	.....	.....	6.40
Whipple barracks, Ariz.....	232	198.28	.....	.....	5.50
Fort Riley, Kans.....	581	191.03	.....	.....	4.30
Fort Wadsworth, N. Y.....	176	187.50	.....	.....	4.47
Fort Hancock, Tex.....	53	169.80	.....	.....	10.08
Fort McHenry, Md.....	155	167.75	.....	.....	2.62
Fort Washakie, Wyo.....	160	143.75	.....	.....	1.63
Fort Porter, N. Y.....	113	141.59	.....	.....	1.31
Jackson barracks, La.....	116	129.31	.....	.....	3.71
The Army.....	25,287	93.64	.07	.....	2.45

II.—RHEUMATISM.

[Muscular and articular.]

Sandy Hook, N. J.....	58	224.13	.....	.....	2.03
Rock Island arsenal, Ill.....	65	184.62	.....	.....	6.19
Saint Francis barracks, Fla.....	129	162.79	.....	.....	1.68
Plattsburg barracks, N. Y.....	58	155.16	.....	.....	5.72
Fort Wingate, N. Mex.....	351	148.14	.....	.....	5.71
Fort Missoula, Mont.....	199	135.68	.....	5.03	3.62
Fort Brown, Tex.....	83	120.48	.....	.....	3.89
Fort Pembina, N. Dak.....	59	118.64	.....	16.95	5.30
Davids Island, N. Y.....	511	117.42	.....	1.96	2.26
Mount Vernon barracks, Ala.....	177	107.34	.....	.....	2.90
Camp Eagle Pass, Tex.....	56	107.14	.....	.....	1.52
Fort McKinney, Wyo.....	276	101.45	.....	3.62	2.80
Fort Marcy, N. Mex.....	165	96.97	.....	6.06	6.36
West Point, N. Y.....	383	96.61	.....	.....	1.79
Fort D. A. Russell, Wyo.....	472	95.84	.....	.....	4.21
Jackson barracks, La.....	116	94.83	.....	.....	1.37
Fort Myer, Va.....	259	92.66	.....	3.86	2.86
Fort Assiniboine, Mont.....	514	91.44	.....	.....	3.68
Fort Buford, N. Dak.....	285	91.23	.....	.....	3.21
San Diego barracks, Cal.....	66	90.91	.....	.....	6.27
The Army.....	25,287	65.84	.....	.94	3.17

TABLE XVI.—Twenty posts giving the highest admission rates for malarial diseases, rheumatism, diarrheal and venereal diseases, respectively, during 1895—Continued.

III.—DIARRHEAL DISEASES.

Name of station.	Mean strength.	Rates per 1,000 of mean strength.			
		Admissions.	Deaths.	Discharges for disability.	Constantly non-effective.
Fort Clark, Tex.....	814	455.42	.....	.....	5.16
Sandy Hook, N. J.....	58	327.58	.....	.....	2.27
Fort Hancock, Tex.....	53	320.73	.....	.....	2.69
Saint Francis barracks, Fla.....	129	263.56	.....	.....	1.77
Fort Sheridan, Ill.....	635	236.20	.....	.....	1.40
Fort Ontario, N. Y.....	63	222.22	.....	.....	1.30
Fort Hamilton, N. Y.....	259	220.08	.....	.....	2.04
Fort Keogh, Mont.....	459	211.31	.....	.....	1.89
Fort Pembina, N. Dak.....	59	203.40	.....	.....	1.81
Jefferson barracks, Mo.....	484	200.42	.....	.....	2.46
Fort Barrancas, Fla.....	120	183.34	.....	.....	1.94
San Diego barracks, Cal.....	66	181.81	.....	.....	1.74
Newport barracks, Ky.....	56	178.57	.....	.....	2.49
Fort Supply, Okla.....	221	176.46	.....	.....	1.56
Fort Reno, Okla.....	282	173.75	.....	.....	2.17
San Carlos, Ariz.....	175	171.42	.....	.....	1.46
Fort Adams, R. I.....	259	169.88	.....	.....	1.08
Fort Monroe, Va.....	467	169.17	.....	.....	1.77
Fort Schuyler, N. Y.....	113	168.14	.....	.....	1.82
Fort Bliss, Tex.....	155	167.74	.....	.....	1.63
The Army.....	25,287	98.47	.04	.08	.96

IV.—VENEREAL DISEASES.

Columbus barracks, Ohio.....	626	333.88	.....	4.79	24.08
Fort Brown, Tex.....	83	265.05	.....	.....	19.54
Fort Ringgold, Tex.....	149	234.90	.....	6.71	15.78
Fort McIntosh, Tex.....	165	218.18	.....	.....	17.62
Jackson barracks, La.....	116	206.88	.....	.....	15.71
Fort Ontario, N. Y.....	63	190.47	.....	15.87	14.78
Washington barracks, D. C.....	287	167.25	.....	3.48	13.50
Fort Clark, Tex.....	814	165.61	.....	12.73	11.85
Saint Francis barracks, Fla.....	129	162.79	.....	.....	11.38
Camp Eagle Pass, Tex.....	56	160.72	.....	.....	15.31
Mount Vernon barracks, Ala.....	177	158.20	.....	11.30	6.91
Fort Thomas, Ky.....	368	146.74	.....	2.72	7.89
Angel Island, Cal.....	299	140.47	.....	6.69	11.37
Fort Hancock, Tex.....	53	132.07	.....	.....	9.10
Key West barracks, Fla.....	61	131.14	.....	.....	8.98
Fort Wayne, Mich.....	246	126.02	.....	.....	7.78
Fort McHenry, Md.....	155	122.58	.....	.....	8.83
Fort Barrancas, Fla.....	120	116.66	.....	8.33	7.94
Fort Walla Walla, Wash.....	189	116.40	.....	.....	10.84
Fort Porter, N. Y.....	113	115.04	.....	.....	7.12
The Army.....	25,287	73.08	.....	1.92	5.41

TABLE XVII.—*Twenty posts giving the highest noneffective rates for malarial diseases, rheumatism, diarrheal and venereal diseases, respectively, during 1893.*

I.—MALARIAL DISEASES.

Name of station.	Mean strength.	Constantly noneffective per 1,000 of mean strength.	Average number sick daily.	Average number of days each case was treated.
Fort Clark, Tex	314	19.53	0.13	21.31
Fort Huachuca, Ariz.....	292	12.35	3.61	16.68
Washington barracks, D. C.....	287	11.80	3.30	5.04
Fort Bliss, Tex	155	11.15	1.73	8.53
Jefferson barracks, Mo.....	484	10.65	5.16	7.44
Fort Myer, Va	259	10.09	2.61	5.75
Fort Hancock, Tex	53	10.03	.53	21.56
Fort Grant, Ariz.....	291	7.54	2.19	12.71
Camp Eagle Pass, Tex	56	6.80	.38	23.17
Fort Preble, Me.....	62	6.67	.41	75.50
Fort Reno, Okla.....	282	6.40	1.81	10.80
Whipple barracks, Ariz.....	232	5.50	1.28	10.13
Columbus barracks, Ohio	626	5.34	3.34	22.18
Fort Barrancas, Fla.....	120	4.79	.58	6.56
Mount Vernon barracks, Ala.....	177	4.52	.80	4.79
Fort Wadsworth, N. Y.....	176	4.47	.79	8.70
Fort Sill, Okla	310	4.45	1.38	5.48
Fort Riley, Kans.....	581	4.30	2.50	8.22
Fort Hamilton, N. Y	259	4.28	1.11	4.35
Leavenworth Prison, Kans.....	118	4.13	.49	35.00
The Army	25,287	2.45	62.74	9.57

II.—RHEUMATISM.

Fort Warren, Mass.....	113	8.97	1.01	52.86
Fort Ringgold, Tex.....	149	6.66	.99	34.26
Fort Marcy, N. Mex.....	165	6.36	1.05	23.94
San Diego barracks, Cal	66	6.27	.41	25.17
Rock Island arsenal, Ill	65	6.19	.40	12.25
Plattsburg barracks, N. Y	58	5.72	.33	13.44
Fort Wingate, N. Mex.....	351	5.71	2.01	14.08
Fort Bowie, Ariz.....	110	5.68	.62	114.00
Fort Grant, Ariz.....	291	5.51	1.60	25.43
Camp Poplar River, Mont.....	75	5.41	.41	29.60
Fort Ontario, N. Y	63	5.26	.33	121.00
Fort Pembina, N. Dak.....	59	5.20	.31	16.00
Fort Niobrara, Nebr	457	5.01	2.29	20.37
Fort Riley, Kans.....	581	4.81	2.79	23.18
Fort McIntosh, Tex	165	4.40	.73	24.00
San Carlos, Ariz.....	175	4.38	.77	23.33
Columbus barracks, Ohio.....	626	4.32	2.71	23.52
Fort D. A. Russell, Wyo.....	472	4.21	1.99	16.13
Fort McPherson, Ga.....	419	4.20	1.76	18.37
Fort Brown, Tex.....	83	3.89	.32	11.80
The Army.....	25,287	3.17	80.04	17.55

TABLE XVII.—Twenty posts, giving the highest noneffective rates for malarial diseases, rheumatism, diarrheal and venereal diseases, respectively, during 1893—Continued.

III.—DIARRHEAL DISEASES.

Name of station.	Mean strength.	Constantly noneffective per 1,000 of mean strength.	Average number sick daily.	Average number of days each case was treated.
Fort Clark, Tex	314	5.16	1.62	4.13
Fort Hancock, Tex.....	53	2.69	.14	3.06
Newport barracks, Ky	56	2.49	.14	5.10
Jefferson barracks, Mo	484	2.46	1.19	4.48
Sandy Hook, N. J.....	58	2.27	.13	2.53
Mount Vernon barracks, Ala	177	2.26	.40	5.03
Fort Reno, Okla.....	282	2.17	.61	4.55
Fort Hamilton, N. Y.....	259	2.04	.53	3.39
Fort Barrancas, Fla.....	120	1.94	.23	3.86
Fort Snelling, Minn.....	432	1.91	.82	7.00
Fort Keogh, Mont.....	459	1.89	.87	3.28
Fort Schuyler, N. Y.....	113	1.82	.21	3.95
Fort Pembina, N. Dak	59	1.81	.11	3.25
Fort Monroe, Va.....	467	1.77	.82	3.81
Saint Francis barracks, Fla	129	1.77	.23	2.44
San Diego barracks, Cal	66	1.74	.12	3.50
Leavenworth Prison, Kans.....	118	1.67	.20	4.80
Fort Bliss, Tex.....	155	1.63	.25	3.54
Fort Supply, Okla.....	221	1.56	.85	3.23
Fort Sam Houston, Tex.....	501	1.50	.74	3.51
The Army.....	25,287	.96	21.24	3.23

IV.—VENEREAL DISEASES.

Columbus barracks, Ohio	626	24.08	15.77	26.33
Fort Mason, Cal.....	62	19.71	1.22	74.33
Fort Brown, Tex	83	19.54	1.62	26.91
Fort McIntosh, Tex.....	165	17.62	2.91	29.50
Fort Ringgold, Tex.....	149	15.78	2.35	24.51
Jackson barracks, La	116	15.71	1.82	27.71
Camp Eagle Pass, Tex.....	56	15.31	.86	34.78
Fort Ontario, N. Y	63	14.78	.93	28.33
Washington barracks, D. C	287	13.50	3.87	20.44
Fort Clark, Tex	314	11.85	3.72	26.12
Saint Francis barracks, Fla	129	11.38	1.47	25.52
Angel Island, Cal.....	290	11.37	3.40	29.55
Fort Sill, Okla.....	310	11.29	3.50	39.94
Fort Walla Walla, Wash.....	189	10.84	2.05	34.00
Fort McKinney, Wyo	276	10.14	2.80	56.72
Fort McPherson, Ga.	419	10.07	4.22	32.77
Camp Poplar River, Mont.....	75	9.54	.72	52.20
San Carlos, Ariz	175	9.19	1.61	36.69
Fort Hancock, Tex.....	53	9.10	.48	25.14
Key West barracks, Fla	61	8.98	.55	25.00
The Army.....	25,287	5.41	136.70	27.00

TABLE XVIII.—*Prevalence of alcoholism at the various posts and its influence on the effective force of the garrisons for the year 1893.*

Name of station.	Mean strength.	Ratio per 1,000 of mean strength.		Name of station.	Mean strength.	Ratio per 1,000 of mean strength.	
		Admissions.	Constantly non-effective.			Admissions.	Constantly non-effective.
Fort Porter, N. Y.....	113	212.39	1.50	Fort Marcy, N. Mex.....	165	30.30	.55
Newport barracks, Ky.....	56	178.56	.93	Fort Monroe, Va.....	467	29.98	.39
Willeys Point, N. Y.....	370	170.27	2.07	Fort Robinson, Nebr.....	505	29.70	.33
Key West barracks, Fla.....	61	163.93	1.75	New York attending surgeon, N. Y.....	35	28.57	.23
Jackson barracks, La.....	116	146.54	1.51	Fort Ringgold, Tex.....	149	26.84	.85
Fort Warren, Mass.....	113	106.19	.75	Watertown arsenal, Mass....	38	26.32	.14
Fort Sidney, Nebr.....	199	100.50	.99	Fort Keogh, Mont.....	459	26.14	.45
San Diego barracks, Cal.....	66	90.91	.66	Fort Sill, Okla.....	310	25.81	.32
Fort D. A. Russell, Wyo.....	472	84.74	1.22	Fort Clark, Tex.....	314	25.48	.24
Fort Brady, Mich.....	170	82.35	.82	Presidio of San Francisco, Cal	490	24.49	.21
Fort Barrancas, Fla.....	120	75.00	.91	Fort Grant, Ariz.....	291	24.05	.19
Mount Vernon barracks, Ala.	177	73.45	1.52	Frankford arsenal, Pa.....	42	23.81	.07
Camp Eagle Pass, Tex.....	56	71.43	.34	Fort Myer, Va.....	259	23.17	.31
Benicia barracks, Cal.....	212	70.75	.75	Fort Snelling, Minn.....	432	23.15	.39
Sandy Hook, N. J.....	58	68.96	.47	Fort Thomas, Ky.....	368	21.74	.17
Fort McKinney, Wyo.....	276	68.84	.74	David's Island, N. Y.....	511	21.53	.15
Fort McPherson, Ga.....	419	66.83	.87	Fort Bidwell, Cal.....	47	21.28	.87
Fort Logan, Colo.....	359	64.06	.63	Fort Spokane, Wash.....	141	21.28	.06
Saint Francis barracks, Fla..	129	62.02	.62	Fort Riley, Kans.....	581	20.65	.16
Fort Brown, Tex.....	83	60.24	.63	Fort Huachuca, Ariz.....	292	20.55	.26
Columbia arsenal, Tenn.....	17	58.82	1.61	Vancouver barracks, Wash..	440	20.45	.17
Fort Wayne, Mich.....	246	56.91	.72	Fort Leavenworth, Kans....	742	20.21	.19
Fort Niobrara, Nebr.....	457	56.89	.76	Fort Meade, S. Dak.....	412	19.42	.17
Fort Wingate, N. Mex.....	351	54.13	.54	Fort Adams, R. I.....	259	19.30	.14
Fort Sherman, Idaho.....	307	48.86	.29	Fort Canby, Wash.....	106	18.87	.06
Fort Yates, N. Dak.....	267	48.69	.26	Madison barracks, N. Y.....	325	18.46	.23
Rock Island arsenal, Ill.....	65	46.15	.84	Boise barracks, Idaho.....	109	18.35	.15
Washington barracks, D. C..	287	45.30	.73	Fort Bowie, Ariz.....	110	18.18	.30
Fort Schuyler, N. Y.....	113	44.25	.24	Fort Supply, Okla.....	221	18.10	.37
Fort Hamilton, N. Y.....	259	42.47	.38	Fort Bayard, N. Mex.....	336	17.86	.24
Indianapolis arsenal, Ind.....	24	41.67	.11	Fort Sully, S. Dak.....	171	17.54	.11
Augusta arsenal, Ga.....	25	40.00	.22	Plattsburg barracks, N. Y...	58	17.24	.09
Fort McHenry, Md.....	155	38.71	.34	San Carlos, Ariz.....	175	17.14	.14
Fort Douglas, Utah.....	544	38.60	.30	Fort Pembina, N. Dak.....	59	16.95	.09
Fort Washakie, Wyo.....	160	37.50	.43	Angel Island, Cal.....	299	13.38	.05
Fort Stanton, N. Mex.....	107	37.38	.33	Fort Wadsworth, N. Y.....	176	11.36	1.20
Fort Walla Walla, Wash.....	189	37.04	.19	Fort Yellowstone, Wyo.....	100	10.00	.14
Fort Niagara, N. Y.....	219	36.53	.29	Alcatraz Island, Cal.....	118	8.47	.05
Fort McIntosh, Tex.....	165	36.36	.28	Leavenworth prison, Kans..	118	8.47	.09
Fort Wood, N. J.....	56	35.71	.10	Fort Omaha, Nebr.....	469	6.40	.08
Fort Reno, Okla.....	282	35.46	.25	Columbus barracks, Ohio....	626	6.39	.07
Fort Apache, Ariz.....	230	34.78	.55	Fort Missoula, Mont.....	199	5.03	.04
Whipple barracks, Ariz.....	232	34.48	.20	Jefferson barracks, Mo.....	484	4.13	.03
Fort Mackinac, Mich.....	60	33.33	.46	Fort Buford, N. Dak.....	285	3.51	.03
Fort Assiniboine, Mont.....	514	33.07	.25	West Point, N. Y.....	383	2.61	.02
Fort Sheridan, Ill.....	635	33.07	.30	Field.....	789	6.34	.14
Fort Preble, Me.....	62	32.26	.27				
Fort Sam Houston, Tex.....	501	31.94	.38				
Fort Ontario, N. Y.....	63	31.75	.43				
Fort Columbus, N. Y.....	193	31.09	.57				
				The Army.....	25,287	33.97	.37

TABLE XIX.—Number of applicants for enlistment examined during the year 1893, with the number accepted, rejected on primary examination, and declined, and ratios per thousand.

	White.		Negro.		Indian.*		Total.	
	Num-ber.	Ratio per 1,000 white ex-amin-ined.	Num-ber.	Ratio per 1,000 negroes exam-ined.	Num-ber.	Ratio per 1,000 Indians exam-ined.	Num-ber.	Ratio per 1,000 exam-ined.
Examined	19,036	1,000.00	1,191	1,000.00	105	1,000.00	20,332	1,000.00
Accepted.....	8,208	431.18	524	439.97	81	771.43	8,813	433.45
Rejected.....	9,906	520.88	639	536.52	23	219.05	10,568	519.77
Declined.....	922	48.43	28	23.51	1	9.52	951	46.77

*Including only applicants for enlistment as soldiers for the regular term of five years. In addition to these, 179 Indian applicants for enlistment as scouts were examined, of whom all were accepted.

TABLE XX.—Causes of rejection among 20,332 recruits examined during the year 1893, with corresponding ratios per 1,000 of each race examined.

Number examined.....	White, 19,036.				Negro, 1,191.			
Cause of rejection.	Rejected on pri-mary exam-ination.	Rejected on sec-ondary exam-ination.	Total.	Ratios per 1,000.	Rejected on pri-mary exam-ination.	Rejected on sec-ondary exam-ination.	Total.	Ratios per 1,000.
Miasmatic diseases	2	.....	2	.11	.....	.....	.....	.....
Enthetic diseases	268	14	282	14.81	40	.....	40	33.59
Dietic diseases	164	.....	164	8.61	4	.....	4	3.36
Constitutional diseases	29	4	33	1.73	2	.....	2	1.68
Parasitic diseases.....	26	.....	26	1.37	.....	.....	.....	.....
Diseases of the nervous system ...	17	11	28	1.47	1	.....	1	.84
Diseases of the eye	1,540	21	1,561	82.00	61	.....	61	51.22
Diseases of the ear	115	8	123	6.46	3	.....	3	2.52
Diseases of the nose.....	9	3	12	.63	1	.....	1	.84
Diseases of the respiratory organs.	38	8	46	2.47	.....	.....	.....	.....
Diseases of the circulatory organs.	475	25	500	26.27	25	1	26	21.83
Diseases of the digestive system..	521	2	523	27.47	17	.....	17	14.27
Diseases of the lymphatic system..	2	.....	2	.11	.....	.....	.....	.....
Diseases of the genito-urinary sys-tem	817	17	834	43.81	35	.....	35	29.39
Diseases of the locomotor system..	375	6	381	20.01	27	1	28	23.51
Diseases of the integumentary system.....	139	5	144	7.56	4	.....	4	3.36
Hernia.....	145	8	153	8.04	15	.....	15	12.59
Other injuries	110	16	126	6.62	4	.....	4	3.36
Minors	507	.....	507	26.63	24	.....	24	20.15
Over age.....	185	.....	185	9.72	15	.....	15	12.59
Over height.....	14	.....	14	.74	2	.....	2	1.68
Under height.....	353	.....	353	18.54	25	.....	25	20.99
Over weight and obesity.....	46	.....	46	2.42	3	.....	3	2.52
Under weight.....	909	2	911	47.86	37	.....	37	31.07
Imperfect physique.....	806	10	815	42.81	61	.....	61	51.22
Mental insufficiency.....	17	1	18	.95	3	1	4	3.36
Married or having dependent rela-tives.....	123	.....	123	6.46	19	.....	19	15.95
Illiteracy	36	.....	36	1.89	7	.....	7	5.88
Imperfect knowledge of English..	308	.....	308	16.18	13	.....	13	10.92
Discharged from previous service for disability or by order	37	.....	37	1.94	2	.....	2	1.68
Deserters from previous service and ex-convicts.....	7	1	8	.42	1	.....	1	.84
Fraudulent enlistment.....	.....	95	95	4.99	.....	5	5	4.20
Character, bad or doubtful.....	207	6	213	11.19	17	.....	17	14.27
References, none or unsatisfactory.	617	.....	617	32.41	29	.....	29	24.35
General unfitness and undesirable.	695	.....	695	36.51	67	.....	67	56.26
No vacancies	143	.....	143	7.51	63	.....	63	52.90
Unclassified	105	4	109	5.73	12	.....	12	10.08
Total	9,906	267	10,173	534.41	639	8	647	543.24

TABLE XX.—Causes of rejection among 20,332 recruits examined during the year 1893, with corresponding ratios per 1,000 of each race examined—Continued.

Number examined.....	Indian, 105.				Total, 20,332.			
Cause of rejection.	Rejected on pri- mary exam- ination.	Rejected on sec- ondary exam- ination.	Total.	Ratios per 1,000.	Rejected on pri- mary exam- ination.	Rejected on sec- ondary exam- ination.	Total.	Ratios per 1,000.
Miasmatic diseases.....					2		2	.10
Enthetic diseases.....	5		5	47.62	313	14	327	16.08
Dietic diseases.....					168		168	8.26
Constitutional diseases.....	1	1	2	19.05	32	5	37	1.82
Parasitic diseases.....					26		26	1.28
Diseases of the nervous system.....					18	11	29	1.43
Diseases of the eye.....	5		5	47.62	1,606	21	1,627	80.02
Diseases of the ear.....					118	8	126	6.20
Diseases of the nose.....					10	3	13	.64
Diseases of the respiratory organs.....	1		1	9.52	39	8	47	2.31
Diseases of the circulatory organs.....	1		1	9.52	501	26	527	25.92
Diseases of the digestive system.....					538	2	540	26.56
Diseases of the lymphatic system.....					2		2	.10
Diseases of the genito-urinary sys- tem.....	1		1	9.52	853	17	870	42.79
Diseases of the locomotor system.....	2		2	19.05	404	7	411	20.21
Diseases of the integumentary sys- tem.....	1		1	9.52	144	5	149	7.33
Hernia.....					160	8	168	8.26
Other injuries.....	1	1	2	19.05	115	17	132	6.49
Minors.....	2		2	19.05	533		533	26.21
Over age.....	1		1	9.52	201		201	9.89
Over height.....					16		16	.79
Under height.....					378		378	18.59
Over weight and obesity.....					49		49	2.41
Under weight.....					946	2	948	46.67
Imperfect physique.....	2		2	19.05	868	10	878	43.18
Mental insufficiency.....		1	1	9.52	20	3	23	1.13
Married or having dependent rela- tives.....					142		142	6.96
Illiteracy.....					43		43	2.11
Imperfect knowledge of English.....					321		321	15.79
Discharged from previous service for disability or by order.....					39		39	1.92
Deserters from previous service and ex-convicts.....					8	1	9	.44
Fraudulent enlistment.....						100	100	4.92
Character bad or doubtful.....					224	6	230	11.31
References, none or unsatisfac- tory.....					646		646	31.77
General unfitness and undesirable.....					762		762	37.48
No vacancies.....					206		206	10.13
Unclassified.....					117	4	121	5.95
Total.....	23	3	26	247.62	10,568	278	10,846	533.44

TABLE XXI.—*Nativity of recruits accepted during the year 1893, with ratios per thousand accepted.*

Nativity.	White.		Negro.		Indian.		Total.	
	Num-ber.	Ratios per 1,000 accepted.	Num-ber.	Ratios per 1,000 accepted.	Num-ber.	Ratios per 1,000 accepted.	Num-ber.	Ratios per 1,000 accepted.
United States.....	5,266	597.53	523	59.34	80	9.08	5,869	665.95
England.....	338	38.35	.....	.....	.....	.....	338	38.35
Scotland.....	65	7.38	.....	.....	.....	.....	65	7.38
Wales.....	8	.91	.....	.....	.....	.....	8	.91
Ireland.....	841	95.43	.....	.....	.....	.....	841	95.43
Canada.....	189	21.45	.....	.....	1	.11	190	21.56
Other British possessions..	13	1.48	1	.11	.....	.....	14	1.59
Franco.....	22	2.50	.....	.....	.....	.....	22	2.50
Belgium.....	9	1.02	.....	.....	.....	.....	9	1.02
Holland.....	12	1.36	.....	.....	.....	.....	12	1.36
Denmark.....	112	12.71	.....	.....	.....	.....	112	12.71
Norway.....	73	8.28	.....	.....	.....	.....	73	8.28
Sweden.....	139	15.77	.....	.....	.....	.....	139	15.77
Germany.....	812	92.14	.....	.....	.....	.....	812	92.14
Switzerland.....	64	7.26	.....	.....	.....	.....	64	7.26
Austria.....	71	8.06	.....	.....	.....	.....	71	8.06
Bohemia.....	22	2.50	.....	.....	.....	.....	22	2.50
Hungary.....	9	1.02	.....	.....	.....	.....	9	1.02
Poland.....	33	3.74	.....	.....	.....	.....	33	3.74
Russia.....	80	9.08	.....	.....	.....	.....	80	9.08
Finland.....	10	1.13	.....	.....	.....	.....	10	1.13
Italy.....	13	1.48	.....	.....	.....	.....	13	1.48
Other countries.....	7	.79	.....	.....	.....	.....	7	.79
Total.....	8,208	931.35	524	59.46	81	9.19	8,813	1,000.00

TABLE XXII.—Average height, weight, and chest measure of 8,813 recruits

Age.	Whole number examined.				Average height (in inches).			
	White.	Negro.	Indian.	Total.	White.	Negro.	Indian.	Total.
16	5	.....	.....	5	66.20	.....	.....	66.20
17	7	.....	2	9	66.18	.....	66.88	66.33
18	245	7	8	260	67.26	66.32	68.19	67.26
19	202	6	4	212	67.64	66.21	69.88	67.65
Under 20 (average, 18.4).....	459	13	14	486	67.40	66.27	68.48	67.40
20	181	9	4	194	67.63	66.92	68.31	67.61
21	1,742	78	12	1,832	67.53	67.26	69.50	67.53
22	936	45	4	985	67.62	67.34	67.38	67.60
23	680	34	5	719	67.56	67.29	68.45	67.54
24	551	24	4	579	67.65	67.23	69.50	67.65
20 to 24 (average, 21.9).....	4,090	190	29	4,309	67.58	67.27	68.52	67.57
25	483	20	4	507	67.52	67.89	68.31	67.54
26	553	53	5	611	67.40	67.21	68.10	67.37
27	441	38	4	483	67.52	67.03	67.19	67.48
28	347	35	5	387	67.43	67.34	69.60	67.45
29	278	20	9	307	67.87	67.35	69.33	67.43
25 to 29 (average, 26.7).....	2,102	166	27	2,295	67.45	67.29	68.31	67.45
30	134	14	5	153	67.53	67.14	68.85	67.47
31	206	22	1	229	67.54	66.83	70.50	67.48
32	159	15	1	175	67.38	67.37	70.00	67.40
33	122	15	.....	137	67.07	67.37	.....	67.10
34	119	6	1	126	67.20	65.17	70.00	67.12
30 to 34 (average, 31.8).....	740	72	8	820	67.37	66.98	68.09	67.34
35	59	7	.....	66	67.00	67.07	.....	67.01
36	83	4	2	89	67.35	65.75	65.13	67.22
37	68	17	1	86	66.87	66.69	70.75	66.88
38	67	4	.....	71	67.49	68.00	.....	67.52
39	51	7	.....	58	66.64	66.29	.....	66.78
35 to 39 (average, 36.9).....	328	39	3	370	67.14	66.72	67.00	67.09
40 to 49 (average, 43.7).....	427	40	.....	467	67.13	66.88	.....	67.11
50 and over (average, 52.5) ..	62	4	.....	66	67.38	67.06	.....	67.36
Average, 25.9	8,208	524	81	8,813	67.47	67.14	68.35	67.46

accepted during the year 1893 (white, 8,208; negro, 524; Indian, 81).

Average weight (in pounds).				Average chest measure (in inches).							
White.	Negro.	Indian.	Total.	White.		Negro.		Indian.		Total.	
				Expi- ration.	Inspi- ration.	Expi- ration.	Inspi- ration.	Expi- ration.	Inspi- ration.	Expi- ration.	Inspi- ration.
129.00	.....	.....	129.00	30.70	34.10	.....	.....	.....	.....	30.70	34.10
126.00	.....	128.50	126.56	31.39	34.32	.....	.....	32.50	35.38	31.64	34.56
136.47	141.71	148.88	136.99	33.20	35.91	32.86	35.32	33.38	36.88	33.20	35.93
138.93	131.83	150.75	138.95	33.44	36.31	32.33	34.92	34.50	37.88	33.43	36.30
137.31	137.15	146.50	137.57	33.25	36.04	32.62	35.13	33.57	36.95	33.25	36.04
140.72	137.78	135.75	140.48	33.62	36.39	34.14	36.67	33.81	35.81	33.64	36.39
138.04	145.71	152.42	138.46	33.93	36.71	33.69	36.22	34.92	37.73	33.93	36.69
143.79	145.82	148.25	143.90	34.15	36.95	34.04	36.57	33.88	36.88	34.15	36.94
145.06	147.06	155.80	145.23	34.36	37.16	34.07	36.68	34.80	37.65	34.35	37.14
145.34	145.79	154.75	145.43	34.39	37.30	34.56	37.04	34.38	36.88	34.40	37.29
141.63	145.61	150.45	141.86	34.10	36.90	33.97	36.51	34.46	37.22	34.10	36.89
145.41	148.95	152.00	145.60	34.51	37.40	34.38	36.91	34.75	37.88	34.51	37.39
146.05	149.49	157.20	146.44	34.39	37.30	33.90	36.59	36.50	39.00	34.36	37.25
146.15	147.42	145.25	146.24	34.47	37.41	34.28	36.99	34.88	37.56	34.46	37.38
147.66	148.97	52.60	147.84	34.60	37.50	34.01	36.57	35.15	38.40	34.55	37.43
146.58	149.35	164.89	147.30	34.52	37.41	34.08	36.80	35.67	38.67	34.53	37.41
146.26	148.83	156.37	146.56	34.48	37.39	34.09	36.74	35.47	38.40	34.47	37.36
147.31	159.64	154.20	148.67	34.64	37.58	34.66	37.38	35.20	37.90	34.66	37.57
148.47	152.50	150.00	148.86	34.79	37.73	34.49	37.15	33.00	36.50	34.75	37.67
148.14	149.93	167.00	148.41	34.80	37.75	34.28	37.00	33.00	36.50	34.74	37.69
146.80	151.13	.....	147.27	34.55	37.43	34.43	36.93	.....	.....	34.54	37.38
151.13	138.33	164.00	150.63	34.98	37.89	33.71	36.21	36.00	39.00	34.92	37.82
148.34	151.89	156.50	148.73	34.76	37.69	34.40	37.04	34.75	37.69	34.72	37.63
149.58	146.86	.....	149.29	34.83	37.79	33.96	36.64	.....	.....	34.74	37.67
154.30	158.75	129.00	153.93	35.01	38.58	35.63	37.94	32.50	35.00	34.98	38.47
146.31	148.71	164.00	146.99	34.52	37.32	34.28	36.81	36.00	39.00	34.49	37.24
155.22	160.00	.....	155.49	35.76	38.59	35.13	37.63	.....	.....	35.73	38.54
146.53	156.86	.....	147.78	34.69	37.34	34.21	36.64	.....	.....	34.63	37.26
150.77	152.03	140.67	150.82	34.98	37.99	34.44	36.95	33.67	36.33	34.91	37.86
151.03	150.78	.....	151.00	35.08	37.90	34.21	36.73	.....	.....	35.00	37.80
150.35	157.75	.....	150.80	35.39	38.10	34.38	37.13	.....	.....	35.38	38.05
144.10	148.25	151.98	144.42	34.31	37.16	34.09	36.68	34.64	37.58	34.30	37.13

REPORT OF THE PAYMASTER-GENERAL.

ANNUAL REPORT OF THE PAYMASTER-GENERAL.

WAR DEPARTMENT,
PAYMASTER-GENERAL'S OFFICE,
Washington, D. C., September 29, 1894.

SIR: For the fiscal year which ended June 30, 1894, I have the honor to submit the following as the annual report from this office:

July 1, 1893, officers of the Pay Department were charged with public funds aggregating	\$922, 271. 26
During the fiscal year 1894 these officers received—	
From the U. S. Treasury	13, 801, 463. 35
From soldiers' deposits.....	361, 830. 76
From Army paymasters' collections.....	275, 572. 91
Total balances and receipts.....	15, 361, 138. 28

Accounted for as follows:

Expended on account of pay of Army.....	\$13, 333, 675. 03
Expended on account of pay of Military Academy.....	217, 679. 58
Expended on account of contingencies, headquarters of military departments.....	152. 30
Expended on account of pay of volunteers (Treasury certificates)...	411, 373. 91
Surplus funds deposited to credit U. S. Treasurer.....	90, 955. 94
Army paymasters' collections deposited to credit U. S. Treasurer...	275, 572. 91
Balances charged officers June 30, 1894.....	1, 031, 728. 61
Total accounted for.....	15, 361, 138. 28

SOLDIERS' DEPOSITS.

Contrasting this exhibit with the corresponding one for the preceding year, it is observed that the item "soldiers' deposits" shows an increase of \$79,582.72. In the annual report preceding this one, reference is made to the fact that the soldiers' deposit account was surely and persistently falling off. It is gratifying to be able to note in the present report a marked increase in this item of receipts. A soldier with a deposit account rarely leaves the service without an honorable discharge.

PAY OF ARMY.

The expenditures on account of pay of Army show an increase of \$275,653.95 over the corresponding expenditure for the preceding year.

This increase is due in part to the fact that the enlisted force of the Army has been more nearly kept up to its maximum limit, and to the additional fact that the payments to June 30, 1894, were more closely made than was the case at the close of the preceding year.

During the period herein considered, the number of retired enlisted men has increased 105, and a necessary consequence of such increase is a visibly larger expenditure.

PAY OF VOLUNTEERS—TREASURY CERTIFICATES.

During the past year the expenditures on account of pay of volunteers were \$493,653.54 less than the corresponding expenditures the preceding year. This marked decrease in demands of this character indicates that claims for service in the volunteer army are being exhausted. Appeals are often received urging the speedy payment of these claims, whose adjustment has been so long delayed. The Pay Department can not hasten the adjustment of such claims; but when the settlement has been effected in the Treasury Department, and the certificates specifying its distribution are received in this office, the payments are promptly made.

MILEAGE.

At the close of the fiscal year June 30, 1893, it was believed the fund available for mileage for that year would prove ample. When, however, the claims for travel chargeable to that fund had been more fully presented, the fund was found to be insufficient. This situation has been cured by a deficiency appropriation recently made, and the mileage accounts for that year, as far as submitted, have all been paid.

During the past year the mileage demands have been kept clearly within the amount appropriated. It is believed when all claims for mileage properly chargeable to the fund appropriated for the past year's service are settled, there will still remain an unexpended balance of that fund exceeding \$5,000. This is true, although the sum appropriated for mileage the past year was \$20,000 less than that for the preceding year.

The following statement exhibits in some detail the occasion for travel and the outlay incident to such service:

Mileage disbursements (1894 appropriation) from July 1, 1893, to June 30, 1894.

Change of stations	\$46,001.83
European travel	4,887.87
Recruiting duty	14,240.76
Boards of examination to examine officers	8,073.40
Board of Ordnance and Fortifications	846.68
Ordnance Department: gun construction, foundry, steel, powder, and proving ground inspection	3,290.03
Inspection by officers of the Inspector-General's Department	7,688.43
Inspection by other than officers of the Inspector-General's Department ..	6,572.50
Medical boards and inspection by medical officers	3,072.31
Military prison commission and inspection of Military Prison	522.27
Instruction and inspection of National Guard	2,257.47
Retiring-boards and officers retired and ordered home	1,952.32
Payment of troops	16,907.89
Treasurer and professors, Military Academy, Military Academy duty	397.01
Courts-martial (to and from)	10,946.92
Returning from conducting prisoners and insane men	543.89
Boards of survey	57.70
Commanding generals and aids	4,799.36
Rifle teams	8,372.30
Instructions of Secretary of War, duty not defined by orders	3,320.84
On public business, duty not defined by orders	1,673.47
Duty at World's Columbian Exposition	2,675.59
Attending funerals of officers and other deceased officials	592.33
Total	149,693.17

For the year ending June 30, 1895, the amount appropriated for mileage is again \$20,000 less than was appropriated for the past year. The legislation which appropriates this fund directs that it shall be so

apportioned "as to prevent a deficiency therein." As the law permits the expenditure of three-fifths of the fund in the first six months of the fiscal year, it is easy to see that an emergency may arise in the last six months of the year which would make it embarrassing and difficult to keep the mileage demands within the limits of the appropriation act.

RETAINED PAY.

The system of withholding a portion of the soldier's pay until he is discharged leads, oftentimes, to complicated computations, accompanied as it is by many decisions and rulings affecting its payment. It was never applied to volunteer armies, and it is questionable if beneficial results attach to its retention in the regular service. The travel allowance provided for the soldier is ample to take him to his home when discharged, and the withholding of a portion of his pay for that purpose is not necessary.

Corporations employ men at a fixed rate per month, and all civil employes of the Government are retained on a like basis. The same rule should hold in the Army. Any system which makes the soldier a dependent detracts from his manhood and efficiency. Let him be paid a fixed sum per month, without detention of any part of it, and give him enough to make his place in the Army desirable. Many men are enlisted who are told that their pay is \$13 per month. Upon assignment to companies they find that \$4 out of this is retained for each month of the first year. The clothing required for his duty at first is generally beyond his allowance for the first half year, and instead of getting \$13 for his first month's service, he finds himself so much in debt that two or three months must elapse before he receives anything. He oftentimes honestly regards this as a breach of contract on the part of the Government, and therefore deserts. The position of the soldier should be made so honorable and respected that it would be sought for by the best class of men. It is recommended that the system, which is cumbersome, complicated, and entirely unnecessary and obsolete as to usefulness, be abolished.

ONE DISBURSING DEPARTMENT FOR THE ARMY.

It is believed to be in the interest of the public service that there should be but one common pay chest for the Army. As there is a corps of officers specially commissioned to pay the Army, why should it not have charge of all disbursements appropriated for the support and maintenance of the Army, under the orders and direction of the Secretary of War?

The appropriations for all branches of the service could be kept separately, and reports as to expenditures could be rendered promptly and obtained more readily than they are under the present system, where the head of each bureau of the War Department has to be called upon for information of this character. The more compact and businesslike the methods employed in the public service, the better are the results, and it is obvious that a concentration of all disbursements for the Army into one bureau would be a practical and businesslike way of performing that service. It is the practice obtaining in all commercial organizations where unity and simplification are necessary to secure the best results. It is urged that this system should prevail in the disbursement of the various appropriations for the Army.

All disbursements being under the direction of one department, the matter of adjustment of appropriations in case of collections and trans-

fers could be effected without the intervention of correspondence which now occurs between the several departments. One system of accounts would prevail, which would naturally simplify the work and require less force to perform the same.

The officers of the Pay Department are bonded and trained in the matter of fiscal transactions, while many of the disbursing officers of the several bureaus are on disbursing duty temporarily, and bonds can not well be required of them. During the fiscal year 1894, the disbursements on account of the Military Establishment amounted to about \$50,000,000; one-half of this sum was disbursed by officers who were not bonded.

The system of one control for all army disbursements obtains in Germany and Austria.

EXAMINATION OF ACCOUNTS.

Since July 1, 1894, by direction of the Secretary of War, paymasters' accounts have been transmitted to the Second Auditor within twenty days after their receipt in this office. By section 12, act of July 31, 1894, this requirement became law. It has already become apparent that the period of twenty days is not sufficient to enable the critical examination of paymasters' accounts to be made in this office which good service demands. This is especially true of those officers who are serving at the most remote stations. If fault is found with accounts in this office, it is only fair that the officer should be given time to correct the fault while the accounts still remain in this office. As a consequence of the existing requirement, accounts are transmitted to the Treasury Department with suspensions which would be removed if time were allowed sufficient to receive the paymasters' replies to the communications pointing out faults. Many unnecessary charges are thus entered upon the books of this office. Much correspondence ensues which would be avoided if the account could be held in this office ten days longer than is now allowed. It is believed that the War Department should retain within itself the sure means of knowing that its officers are efficient, intelligent, and accurate in the discharge of the duties allotted to them. Such knowledge can not be fully attained without a critical and deliberate examination of the accounts rendered by the disbursing officers. It is therefore recommended that Congress be asked to extend to at least thirty days the period during which accounts rendered by officers of the Pay Department can be held in this office for examination and verification.

CLERICAL FORCE.

By the last appropriation act for legislative, executive, and judicial expenses, the clerical force of this office was reduced by three; but as, under the new system of business directed by War Department order of May 15, 1894, the labor of the office has, in some instances, been reduced, the present force, by constant and close application, has been enabled to dispatch with satisfactory promptness the business of the office, and I desire to express my appreciation of their uniform zeal and devotion to duty and conformity with the new business methods.

PERSONNEL.

In the course of the past year Major Roche was retired, and Major Kilbourne was appointed a paymaster from captain in the Signal

Corps. No other changes in the personnel of the officers of this Department have occurred since the date of the last report.

The payments to the troops have been promptly and acceptably effected, and without loss of public funds.

Attention is invited to the statements appended, which exhibit the condition during the past year of the several appropriations in charge of officers of the Pay Department; also the amounts disbursed and the work accomplished by the individual officers of this Department.

While about 40 per cent of the disbursements by officers of the Pay Department has been made by six officers stationed in this city and in the Military Department of the East, and only 10 per cent of the disbursements has been made by five officers in the Department of the Colorado, it would not be just to infer that the paymasters in the latter Department have been favored. The military force at Fort Porter, N. Y., and that at Fort Apache, Ariz., are practically of equal strength, and the posts are nearly equally distant from the station of the paymaster who pays at those points.

It is evident that the work of effecting payments is much greater at posts which involve travel by ambulance or stage than at those reached by railroad.

During the past fiscal year the overland travel to effect the payments in the Department of the Colorado was much larger than in any of the other military departments.

Very respectfully,

WM. SMITH,
Paymaster-General, U. S. Army.

The SECRETARY OF WAR.

Statement of the account of the Pay Department, U. S. Army, with the appropria-

Appropriation	In account with the Treasury.				
	Balance in the Treasury July 1, 1893.	Amount of appropriations and transfer warrants.	Unexpended balances deposited.	Paymasters' collections deposited.	Repayments in settlement of accounts.
Pay, etc., of the Army, 1894.....		\$13,256,789.78		\$154,464.97	\$26.53
Pay of Military Academy, 1894.....		232,115.08			
Contingencies, headquarters military departments, 1894.....		200.00			
Pay etc. of the Army, 1893.....	\$692,842.45		\$36,026.35	44,815.12	11.84
Pay of Military Academy, 1893.....	23,801.58				
Pay, etc. of the Army, 1892.....	507,314.16		7,140.36	834.21	37.97
Pay of Military Academy, 1892.....	30,004.60				
Pay, etc., of the Army, 1891, and prior years.....			1,422.35	602.79	1,140.66
Pay of 2 and 3 years volunteers, 1871 and prior years.....					283.62
Bounty to volunteers, their widows and legal heirs, 1871 and prior years.....					17.50
Bounty to 15th and 16th Missouri Cavalry Volunteers.....		1,366.27			
Extra pay to officers and men who served in the Mexican war.....		636.00			
Three months' pay proper.....		975.00			
<i>Certified claims.</i>					
Pay, etc., of the Army.....	129.96				
Pay of 2 and 3 years volunteers.....	5,723.26				14.27
Pay of 2 and 3 years volunteers, 1890.....		29.73			
Pay of 2 and 3 years volunteers, 1891.....		228.15			
Pay of 2 and 3 years volunteers, 1892.....			8,069.68		
Pay of 2 and 3 years volunteers, 1893.....	175,366.30		20,000.00		63.56
Pay of 2 and 3 years volunteers, 1894.....		435,000.00			
Bounty to volunteers, their widows and legal heirs.....	18,822.19				90.00
Bounty to volunteers, their widows and legal heirs, 1890.....		384.29			
Bounty to volunteers, their widows and legal heirs, 1891.....		235.72			
Bounty to volunteers, their widows and legal heirs, 1892.....			4,285.24		
Bounty to volunteers, their widows and legal heirs, 1893.....	80,000.00		8,000.00		80.12
Bounty to volunteers, their widows and legal heirs, 1894.....		250,000.00			
Bounty under act of July 28, 1866.....	2,597.45				90.00
Bounty under act of July 28, 1866, 1892.....			2,276.09		
Bounty under act of July 28, 1866, 1893.....			7,387.27		
Bounty under act of July 28, 1866, 1894.....		35,000.00			
<i>Transfer accounts.</i>					
Pay, etc., of the Army, 1893.....					20.63
Pay, etc., of the Army, 1891 and prior years.....		1,569.83			74.57
Signal Service, Pay, 1891 and prior years.....		.44			
Pay of 2 and 3 years volunteers, 1871 and prior years.....		1,580.68			
Total.....	1,537,201.95	14,216,110.97	94,607.34	200,717.00	1,951.27

tions subject to its control during the fiscal year ending June 30, 1894.

In account with the Treasury—Continued.						
Total.	Amount drawn by requisition.		Amount covered into surplus fund.	Total.	Balance in the Treasury June 30, 1894.	Balance in the hands of paymasters June 30, 1894.
	On Pay Department request.	On Treasury settlements.				
\$13,411,281.28	\$13,036,800.00	\$32,257.72		\$13,069,057.72	\$342,223.56	\$919,562.82
232,115.08	225,000.00			225,000.00	7,115.08	33,065.33
200.00	200.00			200.00		47.70
773,695.76	90,000.00	9,816.96		99,816.96	673,878.80	6,716.95
23,801.58					23,801.58	4,100.66
515,326.70	1,500.00	1,350.94	\$512,475.76	515,326.70		1,710.67
30,604.60		0.00	30,595.60	30,604.60		
3,165.80			3,165.80	3,165.80		
283.62			283.62	283.62		
17.50			17.50	17.50		
1,366.27	1,366.27			1,366.27		
636.00	516.00	120.00		636.00		
975.00	975.00			975.00		
120.96					120.96	1,070.52
5,737.53	223.62			223.62	5,513.91	5,513.91
29.73	29.73			29.73		
228.15	228.15			228.15		
8,069.68			8,069.68	8,069.68		
195,429.86					195,429.86	426.90
435,000.00	208,000.00	31.69		208,031.69	226,968.31	35,432.95
18,912.19	704.57	90.00		794.57	18,117.62	18,117.62
384.29	384.29			384.29		
235.72	235.72			235.72		
4,285.24	1,000.00		3,285.24	4,285.24		
88,080.12	39,000.00			39,000.00	49,080.12	2,204.39
250,000.00	170,000.00			170,000.00	80,000.00	21,305.53
2,687.45	300.00	90.00		390.00	2,297.45	
2,276.09			2,276.09	2,276.09		
7,387.27					7,387.27	1,109.10
35,000.00	25,000.00			25,000.00	10,000.00	7,966.09
20.63			20.63	20.63		
1,644.40		1,644.40		1,644.40		
.44		.44		.44		
1,580.68		1,580.68		1,580.68		
16,050,588.62	13,801,463.35	46,991.83	560,189.92	14,408,645.10	1,641,943.52	1,031,728.61
						2,673,672.13

Statement showing the balance in the hands of each disbursing officer of the Pay Department, U. S. Army, on the 1st of July, 1893; the amount remitted to each from the U. S. Treasury, or turned over by other agents during the fiscal year ending June 30, 1894; the amounts accounted for by accounts and vouchers of expenditures, or by transfer or replacement in the Treasury, and the balance remaining in the hands of paymasters to be accounted for in the next fiscal year.

Rank and name.	Balance in hands of each pay-master on June 30, 1893.	Remitted from the Treasury in the year ending June 30, 1894.	Received from other paymas-ters.	Received from sol-diers' de-posits.	Received from pay-master's collec-tions.	Total re-ceived and to be ac-counted for.	Surplus funds de-positd in the Treasury.	Paymas-ter's col-lections deposited in the Treasury.	Expendi-tures.	Transferred to other pay-masters.	Balance in hands of each pay-master on June 30, 1894.	Total ac-counted for.
<i>Colonels and assistant pay-masters-general.</i>												
Terrell, C. M.	\$39,018.83	\$760,020.00	\$19,630.29	\$10,681.84	\$7,255.90	\$836,616.86	.....	\$7,255.90	\$448,480.10	\$353,172.03	\$27,708.83	\$836,616.86
Stanton, T. H.	90,458.97	1,214,820.00	6,605.42	11,092.00	8,545.29	1,331,521.68	\$20,180.09	8,545.29	326,288.99	883,663.21	92,849.10	1,331,521.68
<i>Lieutenant-colonels and dep-uty paymasters-general.</i>												
Glenn, George E.	51,627.42	1,150,020.00	16,030.46	20,348.68	10,557.98	1,248,584.54	108.48	10,557.98	648,097.64	526,312.53	63,507.91	1,248,584.54
Canby, J. P.	18,980.92	386,020.00	42,855.48	2,909.86	6,100.73	456,846.99	170.10	6,100.73	347,757.75	63,387.17	39,431.24	456,846.99
Candee, George W.	22,743.78	1,294,020.00	99,559.21	14,356.75	15,876.79	1,446,556.53	.....	15,876.79	1,034,812.62	286,542.33	129,324.79	1,446,556.53
<i>Majors and paymasters.</i>												
Carey, A. B.	52,931.10	3,122,020.00	62,908.23	14,153.94	9,852.75	3,261,866.02	75.27	9,852.75	1,434,834.31	1,754,551.23	62,552.46	3,261,866.02
Coxe, F. M.	24,920.87	337,020.00	8,000.00	5,572.50	4,273.50	379,786.87	.....	4,273.50	309,486.45	49,300.00	16,726.92	379,786.87
Bates, A. E.	22,534.15	5,000.00	463,345.73	9,052.75	5,924.01	505,856.64	.....	5,924.01	349,189.58	144,867.07	5,875.98	505,856.64
Wilson, C. I.	16,449.94	567,020.00	44,000.00	5,815.00	5,242.71	638,527.65	.....	5,242.91	371,435.91	261,849.03	.....	638,527.65
Eckels, W. H.	38,475.11	285,000.00	143,100.00	14,103.06	9,656.88	490,335.05	.....	9,656.88	436,443.64	5,604.35	38,630.18	490,335.05
Roche, J. R.	.....	.....	10,000.00	.....	.....	10,000.00	.....	.....	.....	10,000.00	.....	10,000.00
Towar, A. S.	.....	215,000.00	82,697.54	13,433.00	8,723.20	319,853.74	.....	8,723.20	270,869.48	18,071.95	22,189.11	319,853.74
Maynardier, W. M.	13,975.24	216,000.00	261,349.03	8,039.00	6,454.98	505,818.25	.....	6,454.98	397,177.91	59,000.00	43,185.36	505,818.25
Arthur, William	13,806.04	.....	253,247.87	17,977.27	12,581.42	297,612.60	.....	12,581.42	260,031.31	7,875.36	17,124.51	297,612.60
Keefer, J. B.	9,334.63	.....	590,419.52	16,111.33	9,733.81	625,599.29	.....	9,733.81	539,956.62	65,284.96	10,673.90	625,599.29
Wham, J. W.	.....	45,000.00	33,000.00	1,335.65	525.10	79,860.75	.....	525.10	58,226.19	.....	21,109.46	79,860.75
Sniffen, C. C.	1,573.49	.....	232,472.03	9,928.06	8,577.51	252,551.09	.....	8,577.51	223,925.23	2,552.29	17,496.06	252,551.09
Baird, George W.	55,232.42	340,000.00	169,972.19	12,864.37	13,332.12	591,401.10	.....	13,332.12	473,945.69	86,528.89	17,594.40	591,401.10
Robinson, George F.	48,507.05	230,000.00	37,104.29	8,237.50	10,288.92	334,137.76	.....	10,288.92	273,429.64	28,000.00	22,419.20	334,137.76
Dodge, F. S.	17,351.49	260,000.00	15,500.00	8,630.85	7,815.62	309,297.96	.....	7,815.62	284,808.92	604.50	16,068.92	309,297.96
McClure, Charles	14,243.86	15,000.00	290,138.13	24,611.21	12,801.06	356,794.26	210.70	12,801.06	319,725.40	9,786.24	14,481.56	356,794.26
Witcher, J. S.	26,618.66	232,000.00	21,514.72	10,032.75	8,077.26	298,243.39	.....	8,077.26	207,934.40	39,130.88	42,890.15	298,243.39
Whipple, C. H.	23,781.78	.....	700,232.26	18,637.53	8,993.39	751,644.96	.....	8,993.39	713,410.35	6,928.63	22,812.59	751,644.96
Comegys, W. H.	3,369.72	.....	462,000.00	15,807.00	15,969.44	497,136.16	.....	15,969.44	459,901.74	10,270.47	10,994.51	497,136.16

Tucker, W. F.	56,896.56	1,301,020.00	129,019.39	9,576.03	10,716.16	1,507,228.14	55,031.35	10,716.16	1,245,262.27	251,249.71	.....	1,507,228.14
Muhlenberg, J. C.	94,173.96	741,483.35	254,843.16	3,656.44	2,585.05	1,096,741.96	.....	2,585.05	743,623.18	152,219.39	143,282.99	1,096,741.96
Smith, George R.	100,035.21	764,000.00	25,100.00	28,476.82	26,644.63	944,256.66	.....	26,644.63	875,749.73	20,271.27	21,591.03	944,256.66
Baker, J. P.	65,260.06	263,000.00	1,706.20	23,008.49	10,355.49	363,330.24	15,174.95	10,355.49	270,270.39	20,815.73	46,713.68	363,330.24
Halford, E. W. ....	.....	.....	430,028.26	10,283.50	11,236.29	451,548.05	5.00	11,236.29	418,334.63	2,500.00	19,472.13	451,548.05
Hamner, W. H. ....	.....	.....	120,700.00	6,318.58	4,153.44	131,172.02	.....	4,153.44	118,139.23	78.00	13,801.35	131,172.02
Kilbourne, C. E. b. ....	.....	58,000.00	118,117.44	6,769.00	2,721.48	185,607.92	.....	2,721.48	106,336.52	44,829.63	31,720.29	185,607.92
Total	922,271.26	13,801,463.35	5,145,196.85	361,830.76	275,572.91	20,506,335.13	90,955.94	275,572.91	13,962,880.82	5,145,196.85	1,031,728.61	20,506,335.13

a Retired October 31, 1893.

b Appointed November 6, 1893.

Statement showing the number of pay trips made, number of days consumed in travel, posts paid, and amount of field and office disbursements made by each disbursing officer of the Pay Department, U. S. Army, during the fiscal year ending June 30, 1894.

Rank and name.	No. of pay trips.	Days consumed.	No. of posts paid.	Miles traveled.					Payments.			Mileage paid to paymas- ters.	Mileage paid to paymas- ters' clerks.		
				Ambu- lance.	Stage.	Railroad.	Steamer.	Other convey- ance.	Total.	In field.	In office.			Total.	
<i>Colonels and assistant pay- masters-general.</i>															
Terrell, C. M.	12	27	27	156	.....	1,412	.....	.....	1,568	\$90, 107.48	\$358, 372.62	\$448, 480.10	\$96.08	
Stanton, T. H.	8	48	23	87	294	7,971	.....	.....	8,352	159, 272.66	167, 011.33	326, 283.99	549.76	
<i>Lieutenant-colonels and dep- uty paymasters-general.</i>															
Glenn, George E.	5	59	20	364	.....	12,703	.....	.....	13,067	180, 321.70	467, 775.94	648, 097.04	909.10	682.68
Canby, J. P.	12	22	12	.....	.....	4,382	.....	.....	4,382	66, 100.24	281, 597.51	347, 757.75	223.08	223.08
Candee, George W.	12	121	58	196	60	16,347	406	.....	17,009	235, 545.19	799, 267.43	1, 034, 812.62	1, 128.65	1, 081.52
<i>Majors and paymasters.</i>															
Carey, A. B.	27	64	124	61	.....	3,048	2,361	.....	5,470	159, 082.20	1, 275, 742.11	1, 434, 834.31	325.10	362.23
Coxe, F. M.	44	89	44	66	.....	3,310	4,282	.....	7,658	158, 291.74	151, 194.71	309, 486.45	630.62	492.84
Bates, A. E.	8	81	52	48	.....	6,184	116	.....	6,348	228, 759.77	120, 429.81	349, 189.58	401.02	400.57
Wilson, C. I.	15	26	35	250	.....	1,929	93	.....	2,277	91, 592.92	279, 842.99	371, 435.91	145.99	137.33
Eckels, W. H.	18	94	42	.....	.....	12,176	3,264	96	15,536	184, 383.52	252, 060.12	436, 443.64	1, 119.23	1, 021.41
Towar, A. S.	6	72	25	1,158	.....	5,859	.....	120	6,637	148, 549.62	122, 319.86	270, 869.48	447.94	345.08
Maynadler, W. M.	12	40	55	279	328	2,124	70	.....	2,801	156, 564.87	240, 613.04	397, 177.91	180.84	176.08
Arthur, William.	11	74	36	851	.....	10,835	.....	.....	11,686	172, 951.84	87, 079.47	260, 031.31	766.86	657.02
Keefer, J. B.	22	49	75	95	.....	6,177	798	.....	7,070	275, 822.04	264, 134.58	539, 956.62	437.79	437.79
Wham, J. W.	8	9	8	6	.....	353	201	.....	560	19, 969.76	38, 256.43	58, 226.19	.....	40.71
Sniffen, C. C.	12	84	65	575	48	10,079	.....	.....	17,302	189, 802.10	34, 123.13	223, 925.23	1, 187.86	1, 198.70
Baird, George W.	11	82	64	237	.....	13,997	403	20	14,660	222, 496.53	251, 449.16	473, 945.69	951.51	953.84
Robinson, George F.	11	85	23	1,252	.....	12,287	.....	.....	13,539	165, 879.15	107, 550.49	273, 429.64	420.60	717.12
Dodge, F. S.	36	106	43	326	.....	14,372	.....	.....	14,698	181, 847.24	102, 961.68	284, 808.92	1, 109.76	1, 045.17
McClure, Charles.	16	91	54	1,041	.....	14,144	.....	117	15,302	268, 660.46	51, 084.94	319, 725.40	1, 020.68	871.11
Witcher, J. S.	12	62	25	1,186	294	3,505	.....	.....	4,988	128, 253.29	79, 681.11	207, 934.40	304.28	359.90
Whipple, C. H.	12	45	59	100	.....	6,623	521	.....	7,244	220, 187.19	493, 223.16	713, 410.35	459.07	459.07
Comegys, W. H.	13	83	37	500	278	14,294	.....	.....	15,072	260, 743.70	199, 158.04	459, 901.74	944.25	953.69
Tucker, W. F.	10	29	37	170	.....	720	3,364	.....	4,274	165, 424.83	1, 079, 837.44	1, 245, 262.27	288.66	252.66
Muhlenberg, J. C.	3	14	11	28	.....	258	1,128	.....	1,414	49, 759.23	693, 863.95	743, 623.18	95.76	91.76
Smith, G. R.	25	102	44	557	30	10,571	.....	64	11,222	389, 594.16	486, 155.57	875, 749.73	684.69	691.20
Baker, J. P.	11	92	30	1,646	.....	7,094	.....	110	8,850	177, 404.06	92, 866.33	270, 270.39	690.97	542.24
Halford, E. W.	15	56	28	225	520	10,166	.....	4	10,915	175, 042.42	242, 392.21	418, 334.63	621.67	646.30
Hamner, W. H.	7	71	29	1,483	.....	1,206	1,412	.....	4,101	98, 212.09	14, 927.14	113, 139.23	279.23	313.99
Kilbourne, C. E.	6	24	21	87	.....	5,083	.....	3	5,123	64, 314.51	42, 022.01	106, 336.52	334.40	831.72
Total	420	1,901	1,212	12,980	1,852	225,312	18,447	534	259,125	5,085,906.51	8,870,974.31	13,962,880.82	10,735.81	10,133.55	

• REPORT OF THE CHIEF SIGNAL OFFICER.

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R E P O R T
OF THE
CHIEF SIGNAL OFFICER.

WAR DEPARTMENT, SIGNAL OFFICE,
October 1, 1894.

To the Hon. DANIEL S. LAMONT,
Secretary of War:

SIR: I have the honor to make the following report on the Signal Corps of the Army for the fiscal year ending June 30, 1894:

MILITARY TELEGRAPH LINES.

The permanent military telegraph lines operated by the Signal Corps, aggregating nearly a thousand miles in length, remained under charge of Capt. Charles E. Kilbourne, Signal Corps, until his promotion to major in the pay department, when these duties devolved upon Capt. Robert Craig, Signal Corps, whose tabular statement as to business transactions of these lines is hereto annexed (A).

The lines have been maintained in an unprecedented state of efficiency during the past year, owing very largely to the intelligent and unremitting energy of Capt. Richard E. Thompson, Signal Corps; Capt. William A. Glassford, Signal Corps; First Lieut. Frank Greene, Signal Corps, and First Lieut. Frederick R. Day, Twentieth Infantry, acting signal officer. The latter officer was relieved from duty during January, 1894.

The military importance of these lines is very great, as they enable the commanding generals of the different departments to keep themselves promptly informed of the conditions and prospective disturbances on the great Indian reservations, and in connection with the Mexican frontier, while it is evident that these lines are indispensable for economical military operations in connection with Indian outbreaks and frontier troubles. The past year has also shown their value as a factor in moving instantly such portions of the Army as were needed as coadjutors to the civil arm of the Government.

During the year the military line from Fort Brown to Fort Ringgold, Tex., was extended to Fort McIntosh, such extension being considered by the commanding general, Department of Texas, as absolutely indispensable, owing to the unsettled condition of affairs along the Rio Grande, where complications of an international character appeared possible.

This extension was completed November 15, 1893, but, owing to material differences of opinion between the inspecting officer and the

contractor as to the character of the work, was not fully accepted by the United States until December 20, 1893.

It follows the so-called "river road," except a few deviations therefrom to shorten the distance and save material. These deviations have proved of doubtful utility, owing to the extremely rapid growth of interfering underbrush. A tendency to injure the line by pistol practice on the insulators and lariat practice on the poles has abated somewhat, through the judicious influence of the more intelligent citizens. It may be added that the completion of this line insures communication with every important point between Laredo and Brownsville.

Pending the action of Congress, which latter resulted in the appropriation of \$17,000 for the construction of the desired line, the absolute military necessity compelled the chief signal officer to erect a temporary line of 70 miles in length in order to meet the emergent condition, thus tiding over the season of military operation. The line was operated for months with marked success, yet, as was pointed out by the Chief Signal Officer, such an expedient proved very costly. Not only was the Government put to the expense of collecting under difficulties and concentrating on the Rio Grande all available telegraph material of the Army, from Washington to Arizona and California, but, owing to the long period which elapsed before the appropriation was available for the permanent line, it resulted in the almost total destruction of the material of which the flying line was constructed, due partly to its use and under conditions for which it was not contemplated, and also to the lawless actions of unknown persons who interfered from time to time with the operations of this line. In the material and transportation the total expense of this 70 miles of flying line was not less than \$2,500.

The conditions under which the Army of the United States is maintained necessarily render emergencies of this kind expensive, as the policy of the Government restricts appropriations and expenditures to such military objects as are indispensable and necessary at the moment.

While the permanent telegraph lines under the control of the Chief Signal Officer of the Army were primarily constructed for military purposes, yet they secondarily subserve commercial interests. The extremely low tariff charges for commercial telegrams range from 10 to 25 cents for 10 words, so that the revenue is necessarily limited; nevertheless the extended volume of such business insures a considerable income.

There have been turned in to the U. S. Treasury during the fiscal year ending June 30, 1894, telegraph tolls amounting to \$1,534.54, while for the same period the additional sum of \$4,260.02 was collected for tolls on account of commercial telegraph companies and turned over to the proper officials. The total number of messages transmitted over Government wires, consisting of Government, State, and other official business, has been tabulated on lines under the supervision of the chief signal officer, and aggregate 27,349, with a tariff value of \$3,893.49. The same proportion for other lines under post commanders makes the aggregate tariff value of the 61,994 messages sent and received between \$15,000 and \$16,000.

FLYING TELEGRAPH LINES.

All late wars, and especially the one now waging between Japan and China, indicate that electrical connections are indispensable to the success of any army operating on a base apart from the general telegraphic system.

Appreciating this fact, the work of the Signal Corps for the past few years has been given to experimental work in the equipment of its fly-

ing telegraph lines, so that it may be ready for any possible emergency, and the system is so arranged that it looks to performing temporary telephonic service, whether between headquarters of a regiment and separate companies or an army and its different divisions, and whether such operations pertain to garrison, camp, or actual conflict.

SINGLE UNINSULATED WIRE TELEPHONY AND TELEGRAPHY.

I have much pleasure in reporting that the experiments begun in the office of the Chief Signal Officer a little more than a year ago have been productive of most satisfactory results. That which a few years ago was believed to be impossible has been demonstrated to be wholly practicable and is, in fact, an established method of communication by the Signal Corps. Telephony over a small uninsulated wire lying on the ground was, by its discoverer, Capt. Charallois, of the French army, attributed to the peculiar properties of the wire used by him, saying: "The arrangement utilizes the peculiar properties of a special conductor—the Martin bimetallic wire with steel core covered with copper," and again, "The characteristic of the Charallois arrangements resides essentially in the use of this wire." A quantity of this bimetallic wire, with the essential apparatus, was procured by this office from abroad, and experiments made on the same line as those of Charallois. After one trial of the Charallois telephones they were permanently replaced by the Crown telephones owned by the Signal Corps, with resulting sound many times louder than with the Charallois instrument. This was gratifying, but not unexpected, for there has not yet been made a magneto telephone that as a whole excels the Crown as a receiver and transmitter.

The original Charallois system could be used only for speech, and the problem of adapting it to the uses of the Signal Corps as a part of its means of telegraphic communication as well was confronted.

A study of the bimetallic wire led to the conclusion that it did not possess any special electrical qualities, and it was theoretically demonstrated that as good results should follow the use of a single wire of the same diameter, and practical tests with pure copper, silicon bronze, and other wires of the same size as the bimetallic gave as good results.

Important experiments were made with the bimetallic wire, as follows: A half mile of the wire, No. 23 B. G., having a diameter of .025 inch, was laid on wet earth and grass, and conversation was carried on without the least difficulty, the tone of the voice and the volume of sound both being very good. Several hundred yards were added and the wire wound around an iron support buried in damp ground. The voice was easily distinguished, with little or no diminution in the volume of sound. The wire was then wrapped about a piece of brightly polished metal and buried in the damp earth directly in front of the receiver. This even did not affect the volume or tone of the sound received from the distant operator. With these "grounds" in the wire, the line itself, 20 feet in front of the receiver, was buried 3 or 4 inches in the ground. Still the tone and volume of the voice were unaffected, or, if at all, so slightly as to be inappreciable to the ear. Later a mile of the wire was laid on the damp grass and with the same good results as before. Immersion of the wire in a lake, however, completely cut off the conversation. An iron feed pipe to the lake and the wire itself were thoroughly scraped to a clear and bright surface and the wire then wrapped tightly six or seven times around the pipe—this after a mile of the wire had been run out.

Through this mile of wire lying on the ground and grass, and through this seemingly perfect "ground" by the water pipe, the voice came as distinctly and of as great a volume as ever. Again, after a night of very heavy rain, a half mile of the wire was stamped into the ground, soggy with water—in fact, practically buried in half a mile of mud—without affecting the volume or distinctness of sound, and words *whispered* at one end of the line were heard at the other. In another experiment over 150 yards of silicon-bronze wire of the same size as the bimetallic were laid on the wet grass and buried in six places between the two stations, but conversation in low tones was entirely feasible. Capt. Charles E. Kilbourne, Signal Corps, under whose supervision the experiments had been conducted, having been promoted to major in the Pay Department, Capt. James Allen, Signal Corps, continued these experiments with a view to developing a practical system for the use of the Signal Corps. To this time experiments had been made with Crown telephones of the corps. Capt. Allen changed to a Berthon-Ader instrument—a transmitter and telephone receiver—with improved results. These instruments were introduced into a circuit with a battery, induction coil, and telegraph key, and communication by the Morse code attempted. The "back-stroke" of the diaphragm, being much louder than the sound obtained when the current was sent through the magnet, seemed for a time a fatal objection to the use of the instrument as part of a telegraph system. However, an ingenious and scientific solution of the problem was made by Capt. Allen whereby the Morse code through the receiver is read as readily as an ordinary telegraph sounder. This accomplished, experiments with the naked wire were renewed to determine its availability on the ground. Although the wire was buried in several places, the new device was so successful and the sound so loud that the telephone could not be held close to the ear without discomfort. The wire was now cut and the two ends stuck in the ground, at first a few inches apart and eventually at a distance of 45 feet apart, and, incredible though it seems, a message sent from one station was received at the other. The sounds came very distinctly at shorter distances, and at 45 feet distinctly though faintly. At a greater distance than 45 feet the sounds were too faint to be read, while at any less distance little difficulty was experienced in reading a message.

The crude and unsatisfactory reel procured from abroad has been perfected, so that under the most disadvantageous circumstances the wire can be recovered at the rate of a mile in seven minutes. With the French reel it requires twenty or more minutes.

POST PRACTICE LINES.

All but five posts of the Army have been supplied with telegraph instruments and materials for practice telegraph lines. Constructed primarily to stimulate interest in military signaling, which has been accomplished, telegraph practice thereon has been most beneficial to many men in the line of the Army, who have secured positions in civil life through a knowledge of telegraphy thus gained.

LINES ON TARGET RANGES.

It has been possible to furnish to every post asking for them during the past year telephones and wire for the purpose of intercommunication on target ranges. These lines have secured the safety of markers at the butts, as well as saved time in announcing the location of the shot. In intervals of target practice the military administration of many of

the largest posts has been greatly facilitated by the use of such telephones of the Signal Corps.

A study of the wants of the artillery on target ranges has led to the adoption of the sling psychrometer, the compensated aneroid barometer, and the automatic register for the anemometer. The almost instant determination of the velocity of the wind is made possible by the latter instrument. At the close of the year a perfected and expensive sample register was in use, much more accurate and reliable than any heretofore made.

MILITARY SIGNALING.

The Chief Signal Officer is pleased to report that in the Army during the year the number of hours devoted to practice was about 50 per cent in excess of the preceding year. This very gratifying fact is due principally to the cooperation of the commanding generals of the various military departments, who have in many ways evidenced their interest in and appreciation of this branch of military science. Because of opportunity, particular and special interest was taken therein by the commanding generals of the departments of the Missouri, Colorado, and Texas.

The average number of hours given to military signaling in the various departments varies from two in California to five in Dakota, while for the whole Army there was an increase of one hour per man. Nevertheless the total practice of from one-fourth to one half a day per year is inadequate for any serious work.

Doubtless the continued and efficient action of the officers of the Inspector-General's Department and others serving therewith has contributed to bringing this neglected military duty somewhere near the requirements of Army regulations.

The acting signal officers at 36 military posts report that practical use of signaling was made during the year, among the more important of which are:

Fort Adams: Flag signaling between plotting stations during artillery target practice.

Fort Apache: Communication was had for four days between post and Mount Thomas by scouting party sent in that direction.

Fort Barrancas: Flagging observed angles from the base ends to firing station during artillery target practice.

Benicia Barracks: Volley firing of Company A, First Infantry.

Fort Grant: Communication maintained between mountain camp and post. Troop G, First Cavalry, when on practice march signaled from Mount Baldy into Fort Apache, distant about 35 miles, and message was then sent here by telegraph.

Fort Hamilton: Placing targets for artillery practice.

Fort Keogh: On practice march.

Fort Logan: While on practice march communicated with post by flag and heliograph.

Fort McHenry: During mortar practice the base-line stations were communicated with from the battery.

Fort Riley: Signal parties took part in the combined maneuvers of the command.

Fort Sully: During practice march, September, 1893, communication was kept open daily with the post.

Vancouver Barracks: Practical use during practice marches.

Fort Wingate: By scouting parties in this vicinity practical use was made of signaling.

Fort Wood: Communication with Governors Island.

Fort Yates: Practical use of flag and heliograph while on practice march.

Table B shows the amount of study and practice for each department, and the number of officers and enlisted men of each regiment of the Army reported proficient in the simpler phases of military signaling. It will be noted that there are only 11 of the 40 regiments which have the number of officers and men proficient as required by paragraph 1761, Army Regulations. These regiments, in their order of relative proficiency, are as follows:

Cavalry: Eighth, Ninth, and Fifth regiments.

Infantry: Nineteenth, Twenty-third, First, Fifth, Ninth (these last three of equal standing), Sixteenth, and Seventeenth regiments.

Artillery: Fifth regiment.

The following regiments, as shown by the reports, are very deficient and are given in their order of deficiency:

Cavalry: Fourth and Seventh regiments.

Infantry: Twenty-second, Eighteenth, Seventh, Fifteenth, and Fourth regiments.

That such deficiencies obtain, despite the increase in the amount of practice during the last year, exemplifies the very great difficulty, if not impracticability, of training the line of the Army to do its own signaling. The Geronimo campaign in Arizona, the Wounded Knee campaign in South Dakota, and the late service of the Army at Chicago have in turn illustrated that in such emergencies the trained signal men of the line, from intelligence and application necessarily selected soldiers, are needed with their companies, and strenuously avoid detachment in face of prospective combat.

The demands for competent men in connection with electrical appliances of the large posts recently constructed are greater than a corps of fifty sergeants can supply, and in an emergency requiring extended field service it would be simply impossible to supply a sufficient number of trained men. Meanwhile, pending Congressional action to provide for present contingencies, it is recommended that the Commanding General of the Army be directed to detail a company for special training in signaling, telegraph construction, and balloon drill at such post as may be thought most advisable.

The acting inspector-general, Department of the Missouri, in his official report speaks of the work of intercommunication done at Chicago as showing that the non-commissioned officers of the Signal Corps are experts, but adds that it should have a full proportion of expert privates, and not expect to get men from companies for quick and critical work in a crisis.

It is significant that in the current accounts of the present Korean war it was mentioned incidentally that the day following the battle of Ping Yang, the Japanese signal and telegraph corps ran into that city a flying telegraph line extending from Seoul, a distance of 70 miles. The experiences of the Army of the United States last year showed that several military departments had to be stripped of their signal sergeants and telegraph material to enable a similar length of line to be constructed in the valley of the Rio Grande.

Modern warfare is waged under such conditions that a competent signal corps is an absolute necessity, and while the Chief Signal Officer does not wish to urge any extended increase in the corps, yet he feels he would be derelict in his duty did he not urge upon Congress, through the honorable Secretary of War, the extreme importance of adding 50 privates to the corps.

THE SIGNAL SERVICE OF THE DEPARTMENT

In addition to the important communication work which has been done, Capt. James Allen, Signal Corps, has performed the duties of chief signal officer, Department of the Auditorium, Chicago.

Through Capt. Allen's efficient cooperation a wire connection to the National Guard of Illinois in its headquarters at Fort Lincoln in July, 1903, which had been in a former time broken, was secured by Sergeants Clark and Signal Corps in maintaining the line in service.

While the signal service in Chicago is within the army was called by the army to be continued, after the end of the war, yet it seems as though it might have been continued by the Signal Corps.

As soon as the war broke out a signal station was established at Department of the Auditorium. The station was placed in two principal camps in the Lake Forest and in Chicago, where Western Union telegraph offices were immediately established.

The telegraph lines in Chicago were connected with the telephones of the Signal Corps were put in at Lake Forest and at the camp on Lake Forest.

Upon the arrival of the Department of the Signal Corps, Capt. Allen field and his assistants in the Signal Corps were able to connect the two principal camps independent of the Western Union telegraph lines. The signal service in Chicago was maintained by the smoke overhanging the city, which was very good. Later, signal stations were established at Lake Forest and at the Stock Yards, and at Lake Forest. The small number of signal stations available made it impossible to constantly operate these stations, but they were used as points of communication as needed. As these stations were on the road of the city, it was not possible to use the torch for night signaling, therefore lanterns and searchlight way headlights were borrowed. When the two later pattern lanterns were received from Washington they were set up on the Auditorium and Lakota hotels, distant about a mile.

The first day the signal men were on duty continuously from 6 a. m. until 10 p. m.; afterwards from 5 a. m. to 9 p. m. The remarkable efficiency of Capt. Allen's signal stations is shown by the fact that the explosion of the artillery case, which occurred at Fortieth street and Grand Boulevard, was noticed and reported so promptly from the signal station on Keith's hotel, Thirty-sixth and Dearborn streets, that the information thus reached camp in advance of the telegraphic reports. A prearranged code of rocket signals was arranged to give warning of any unusual occurrence at night.

The station on Auditorium tower was connected telegraphically and telephonically over a single wire—duplexed by the method recently devised by Capt. Allen and adopted by the Signal Corps—with the office of the department signal officer in the Auditorium building, where a Western Union telegraph office and long distance telephone connected with the general systems.

The above arrangement rendered communication between the department commander and the troops of the two principal camps entirely independent of all telegraphic and telephonic communication supplied by corporations, so that, even if all the wires in the city had been cut, orders for the movements of troops could have been promptly communicated.

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CHIEF SIGNAL OFFICERS OF DEPARTMENTS.

In addition to the important experimental work elsewhere mentioned, Capt. James Allen, Signal Corps, has performed the duties of chief signal officer, Department of the Missouri, at Chicago.

Through Capt. Allen's efforts, efficient cooperation was extended to the National Guard of Illinois, in its encampment at Terre Haute in July, 1893, where Lieut. T. M. Defrees, Fifth Infantry, was assisted by Sergeants Clarke and Capron, Signal Corps, in instructing the guard in signaling.

While the special service in Chicago to which the Army was lately called by the civil power occurred only after the end of the fiscal year, yet it seems advisable to briefly refer to the part played by the Signal Corps.

As soon as trouble threatened, a Western Union telegraph office was established at department headquarters. The troops were placed in two principal camps on the Lake Front and at Brighton Park, where Western Union telegraph offices were immediately established.

The telegraph facilities not being considered sufficient, long-distance telephones of the Signal Corps were put in at headquarters and at the camp on Lake Front.

Upon the arrival of the detachment of the Signal Corps (Lieut. Maxfield and 12 sergeants) from Fort Riley, stations were established to connect the two principal camps independent of the Western Union telegraph lines. To secure certain communication through the dense smoke overhanging the city, two intermediate stations were put in. Later, signal stations were established at Plaza Hotel, at the Stock Yards, and at Englewood. The small number of signal sergeants available made it impossible to constantly operate these stations, but they were used as points of observation as occasion demanded. As these stations were on the roofs of buildings, it was not practicable to use the torch for night signaling; therefore locomotive and street-railway headlights were borrowed. When the two later-pattern lanterns were received from Washington they were set up on the Auditorium and Lakota hotels, distant about 3 miles.

The first day the signal men were on duty continuously from 6 a. m. until 10 p. m.; afterwards from 8 a. m. to 9 p. m. The remarkable efficiency of Capt. Allen's signal stations is shown by the fact that the explosion of the artillery caisson, which occurred at Fortieth street and Grand Boulevard, was noted and reported so promptly from the signal station on Keith schoolhouse, Thirty-sixth and Dearborn streets, that the information thus reached camp in advance of the telegraphic reports. A preconcerted code of rocket signals was arranged to give warning of any unusual occurrence at night.

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The above arrangement rendered communication between the department commander and the troops of the two principal camps entirely independent of all telegraphic and telephonic communication supplied by corporations, so that, even if all the wires in the city had been cut, orders for the movements of troops could have been promptly communicated.

No body of troops ever before had such complete facilities for transmission of information between the signal stations and the cooperating local systems as arranged by Capt. Allen. As an instance of the ample and sure means of communication arranged for, a long and important order to troops, at a point where there was no regular telegraph office, was dictated by the adjutant-general of the department, by telephone, to a stenographer in an emergency office, and transmitted over an available railroad wire to the commanding officers.

The distance between the extreme signal stations reached 9 miles, and both as outlooks and as means of communication this small system, operated by a dozen skilled sergeants of the Signal Corps, satisfactorily covered an area of 50 square miles.

All told, there were 2 officers and 13 men of the Signal Corps in Chicago, being one-fourth of the entire corps. With a view of securing communication with the troops at the various railroad stations and accurate information of the movement of riotous bodies, the commanding general, Department of the Missouri, requested that additional Signal Corps sergeants and the military balloon be sent to Chicago. As the improved conditions rendered further details unnecessary, no positive orders were given. Precautionary and preliminary investigation showed, however, that by stripping every post and station within thirty-six hours of Chicago the Signal Corps could, in great emergency, have sent but 12 additional men. In connection with prospective change of station 4 additional sergeants were ordered to Chicago, and Capt. Allen was advised by telegraph of the number and names of enlisted men of the line then in or near Chicago whose primary instruction in signaling had commended them to the Chief Signal Officer. This information was drawn from a precautionary list, instituted by the Chief Signal Officer, that shows the name of every officer and enlisted man in the line of the Army whose service could be utilized by the Signal Corps in similar emergency.

No details were asked for by Capt. Allen from the troops of the line, and all signal work was performed by men of the Signal Corps. As Capt. Allen reports, it has been found, over and over again, that men detailed from the line are not only imperfectly instructed, but are reluctant to leave their commands when needed, and always detailed under strong protest from their company commanders.

The efficiency and ability displayed by Capt. Allen in connection with these arrangements were such as to merit the strongest possible commendation of the chief signal officer. The difficulty of organizing the two systems of communication, one independent, the other cooperative, over a great and closely built city like Chicago, would at any time be an intricate and trying task. On this occasion it was doubly so, owing to the disturbed social conditions and insufficient force and the necessity of improvising part of the materials. That Capt. Allen successfully coped with conditions akin to actual warfare thus suddenly imposed upon him, indicates sound judgment and marked administrative ability.

While the system was perfect and sufficient for the emergency, more extended troubles would have overtaxed its possibilities for lack of men. Troops were located at each railway depot, and if at any time it had been necessary to move the Signal Corps would have been called upon to transmit the necessary orders. With the means at hand this would have been impossible, since Signal Corps men were wanting to open the signal stations which, from a military standpoint, should have been established at all principal railway depots. It is apparent that if

the Signal Corps is to be expected to do similar extended work in the future it must have an ample number of men and adequate supply of materials.

In the Army, as in civil life, modern developments have produced such conditions that no single officer or enlisted man can learn the entire technical duties of his profession. It is an era of specialties, and it is wasted energy to train men in such special duties as will not be exacted of them in war times.

Capt. R. E. Thompson, since the close of the World's Columbian Exposition at Chicago, has been on duty as chief signal officer, Department of Texas, his duties including charge of the important military telegraph lines in the valley of the Rio Grande. Among other practical signal work by the line of the Army, he reports that heliographic communication was maintained regularly between Fort Sam Houston and Camp Leon Springs, a distance of 18 miles, for three months.

From July to November, 1893, Capt. W. A. Glassford, Signal Corps, was engaged in supervising the construction by contract of the new military telegraph line between Forts Ringgold and McIntosh, Tex. In January, 1894, he reported to the commanding general, Department of the Colorado, for duty as chief signal officer of that department, which duties he has since performed, together with the charge of extensive military telegraph lines in his own department and elsewhere.

The necessity of a military telegraph line connecting Fort Logan with department headquarters at Denver, Colo., has been strongly urged by Capt. Glassford, in which opinion the chief signal officer concurs, and has submitted an estimate therefor.

First Lieut. Frank Greene, Signal Corps, has remained on duty as chief signal officer, Department of California. He reports that practical use of signals has been made for vessel tracking, target practice, etc., at the military posts at and near San Francisco. The field telegraph train has been equipped so as to be in readiness for instant use and the telegraph line from the department headquarters to Presidio and Fort Mason, which has been practically uninterrupted during the year, has been rearranged in accordance with municipal regulations so as to conform to street improvements.

Acknowledgments are due to Col. A. C. M. Pennington, 4th Artillery, for the efficient performance of his duties as acting chief signal officer, Department of the East.

CABLE CART.

The improved outpost cable cart purchased during the previous fiscal year has been much used and is enthusiastically spoken of by officers who have given it severe and practical test. Designed for use alone, or in connection with field train line, it very materially increases the efficiency of this corps in its telegraph department. A few minor, and those easily remedied, faults have developed in actual service in the Department of Texas. The question of reeling out and recovering wire and outpost cable by bicycle, with automatic devices, is under consideration.

FIELD TRAIN.

The capacity of this method of intercommunication has been many times multiplied during the year by the adoption of an ingenious method of duplexing, whereby telephonic and telegraphic messages may be sent simultaneously and without interference over the same

line. While the earliest experiments in this direction were made abroad, those which resulted successfully in applying it to the flying line of the U. S. Signal Corps were conducted by Capt. James Allen, Signal Corps. This is an immense stride in advance, and with the improvements in naked-wire telephony and telegraphy, and intercommunication with balloon, will, in any emergency, enable the Signal Corps to prove its practical efficiency.

The sections of field train located at Fort Grant, Fort Leavenworth, Presidio of San Francisco, Fort Riley, and Fort Sam Houston have been fully equipped with materials and instruments for the construction of flying lines. The possible utility of these flying semipermanent lines is so obvious that special attention has been given to them, and it is certain that in any emergency they will, as heretofore, evoke appreciation from those in whose interests they may be operated.

The construction of the temporary telegraph line along the Rio Grande as a military necessity, proved the general fitness of the flying line appliances, but the old pattern insulators developed two defects. First, the wire often worked out of the insulator slot, which tended to break the lances and "ground" the line. Second, the extreme heat of the sun softened and deformed the insulator, permitting the line to sway badly and rendering it useless. These difficulties have been remedied. The first by a simple mechanical device which absolutely prevents the wire from leaving the insulator; the second has been obviated for the future by rigid tests of the material of which the insulators are made. They must stand, without deformation, a test of 2,000 pounds pressure to the square inch at a temperature of 150° F. Improved insulators to the number of 5,200 have been purchased and distributed.

TELEPHONES.

The expiration of the patent on the magneto telephone enabled this office to purchase in open market, and so return to the American Bell Telephone Company all telephones on annual rental. There were turned in 11 Eccard pattern, 35 hand telephones, and 7 Blake transmitters. Seven telephones on life rental, style No. 22, were also turned in, being in very bad repair, and there were purchased, 46 hand telephones (receivers), 10 combination sets of magneto telephones and transmitters, 10 Eaton magneto receivers, 2 Brown receivers, and 2 Brown transmitters. There were also procured on life rental from the American Bell Telephone Company 10 head spiral telephones (receivers) for experimental use with the field telephone kit.

TELEPHONE EXCHANGE.

With a view of utilizing the most modern and highly developed system of speedy intercommunication, the chief signal officer has caused to be erected at Fort Leavenworth, Kans., a telephonic exchange under conditions approximating those of actual field service. The entire plant is so arranged that it can be taken up and removed from Fort Leavenworth at any time, and can be put in operation in the field in such manner that a division, brigade, or regimental commander can be in constant communication with the separate units of his command. While the telephonic plant used is necessarily the magneto form, owing to patents on the carbon transmitters, yet the exchange will materially facilitate administration at this large post, and in addition, will familiarize the large number of student officers there present with modern methods of telephonic and electrical intercommunication.

MILITARY BALLOON.

The military captive balloon fabricated under the supervision of Capt. W. A. Glassford, Signal Corps, formed part of the Signal Corps exhibit at the World's Columbian Exposition in Chicago. The complete success attending its many ascensions emphasizes the opinion heretofore expressed that the balloon will be more fully and correctly appreciated as a necessary military auxiliary when occasion next gives opportunity to demonstrate that information invaluable to the general commanding an army in the field, and in no other way attainable, may be quickly and accurately gathered by this means.

Capt. R. E. Thompson, Signal Corps, who had charge of the balloon at the Exposition, set forth in his report how perfectly worked the appliances for intercommunication between the balloon and the earth.

This office has endeavored to keep advised as to practical advance in the construction of dirigible balloons and aëroplanes, but nothing has developed during the year that points to the speedy solution of air navigation. With the earnest study being given the subject by scientists of great ability the near future should be productive of results that will point the way to ultimate success.

The experiences of the past year prove that the utility of the captive balloon is not confined to the open country, but on occasions it may be of supreme importance in connection with operations in the great cities. The great modern city, with its solid blocks of compact buildings extending for many miles, presents unusual facilities for speedy and undisturbed change of base on the part of bodies of lawless and riotous men engaged in committing depredations and in destroying property. The extreme difficulty of overcoming riotous bodies within the limits of a large city was strikingly exemplified in Paris by the commune insurrection, where for weeks an inferior body of ill-disciplined and poorly equipped men successfully resisted the most determined efforts of a superior force of regulars. Within the past year the troops of our own Army, called upon to assist the civil authorities, found themselves marching miles of distance to repress riotous proceedings, while the body of men sought for had accomplished its end and was already moving undisturbed and unobserved to another objective point. Under such conditions the operation of a captive balloon provided with electric and telephonic connection with the commanding general offer an unequalled means of observing and instantly reporting the movements of the hostile rioters, who would thus be under the surveillance of the commanding general, enabling him to act with promptness and effect.

During the year the balloon wagon, with automatic reel for paying out and recovering the cable by which the ascent and descent of the balloon is regulated, was finished and sent to Fort Riley, the present station of the balloon. However, in compliance with the wish of Gen. A. McD. McCook, commanding the Department of the Colorado, the balloon will shortly be sent to Fort Logan, Colo., at which post it will be less subjected to high winds than at Fort Riley, and where it will be available for field practice with military maneuvers, as contemplated by the commanding general of that department. This will enable officers of the line to become familiar with the military use of the balloon, as has for years been the practice in foreign armies—notably so in Austria-Hungary, France, Germany, and Great Britain.

SIGNAL SCHOOL OF INSTRUCTION.

First Lieut. J. E. Maxfield, Signal Corps, has remained in charge of the instruction of enlisted men of the corps at Fort Riley, Kans. The course of instruction is divided into theoretical and practical, the former occupying four months and the latter two months. The course embraces electricity, telegraphy, telephony, military signaling, field surveying, including map making and photography, and is designed to make each man an expert signalist, a good telegraph operator, and qualify him to make rough field sketches.

A visit was made to the school by the Chief Signal Officer in August, 1893, the first inspection for four years. The methods used by Lieut. Maxfield in connection with his work of instruction fully confirmed the previously expressed opinion that his varied duties in connection with the work of instruction and testing, and experiments bearing on the equipments of the Signal Corps, have been performed in a highly meritorious manner. It was found, however, that the instruction work of the small class was necessarily conducted in one of the large barracks which must be used for troops whenever Fort Riley is fully garrisoned. It is recommended that a small building be constructed for use as class rooms and for experimental work.

The field-telegraph train at Fort Riley is insufficiently protected from the weather, and a suitable shed for its protection and the storage of reserve signal stores is needed and recommended.

Beneficial results have followed the intelligent and well-directed efforts of the instructor of military signaling at the school at Fort Leavenworth.

MILITARY CABLE LINES.

The usual vicissitudes of service and the natural deterioration of time have practically destroyed the system of telegraphic lines and cables connecting the fortifications of San Francisco Harbor. The Chief Signal Officer, in his previous annual reports, has called attention to the great military value of this system and the impracticability of renewing it without a special appropriation. If the harbor of San Francisco is of sufficient importance to justify its defense being provided for by extensive and costly fortifications, it is equally imperative that means for electrical intercommunication should also be provided, so that, when occasion requires, the entire system of defense can be controlled and directed by one master hand. To this end a special estimate of \$6,000 has been submitted for renewing the cable system, the minimum amount with which any means of electrical communication can be restored.

Similar systems of intercommunication should be established in the harbors of New York and Boston, where, however, the commercial telegraph systems, certain to be interrupted in time of war, present much greater convenience for present military administration.

In his annual report for 1892 the Chief Signal Officer recommended the laying of cables in New York, Boston, and San Francisco harbors. Estimates were forwarded, but did not receive favorable action. It is now incidentally learned that a cable has been laid between Fort Wadsworth and Fort Hamilton in New York Harbor, but the Chief Signal Officer is ignorant as to the appropriation used for this work, or by whose authority such cable was laid. While the Chief Signal Officer is specifically charged by the act of October 1, 1890, with "the construction, repair, and operation of military telegraph lines," he has no wish to interfere with any plan that would give protection to the metropolis of the United

States by bringing closer together two of its military defenses. It is none the less obvious that the extension of such powers to other bureaus of the War Department, in contravention to the above law defining the duties of the Chief Signal Officer, can not but be considered an unfortunate policy, which, unnoticed, might be construed as a precedent. The cable once established, this office has been called on for instruments and supplies for its operation, by which requisition was first disclosed to the Chief Signal Officer the remarkable fact that such a military telegraph cable had been laid.

WORLD'S COLUMBIAN EXPOSITION.

The Signal Corps exhibit at the World's Columbian Exposition at the end of the last fiscal year, which was on exhibition under charge of Capt. E. E. Thompson, Signal Corps, has been packed and removed.

A tabulated list of the most important exhibits is attached hereto (D).

The installment, management, and maintenance of the exhibit were such as to reflect credit on the Army in general, and upon the officers and men charged therewith.

While Capt. Thompson displayed the zeal and interest which is naturally expected from a selected officer of a corps, he also brought to his work such tact, discrimination, and judgment as made the exhibit the magnificent success evinced by the enormous crowds that thronged it, especially during the latter months of the Exposition. The five signal sergeants in addition to their usual duties connected with the Exposition gave practical exhibitions in signaling, balloon and field telephony.

During October practical instruction was given to officers and men of the Signal Corps by several hundred ascents of the military captive balloon, which was inflated by hydrogen gas compressed into steel tubes at 120 atmospheres. During these ascents satisfactory telephonic communication was maintained between the earth and the balloon observer.

In connection with the flights of homing pigeons, the Signal Corps cooperated with the other departments having it in charge.

The extreme interest shown in the live exhibits of the Signal Corps, as compared with dead exhibits (that is, exhibits in cases, etc.), seems to indicate, as suggested by Capt. Thompson, the most favorable line of operations for future military expositions. Undoubtedly the practical side of an exhibit should be kept constantly in view, but the more active the line of its operations the greater the satisfaction it affords.

The Arctic exhibit illustrating the return from the "Farthest North" excited such general interest that the board of managers of the Midwinter Exposition, in San Francisco, Cal., made application for its loan, which was granted by the Secretary of War. The exhibit was taken and returned without expense to the United States, and the greater part of it has been deposited in the National Museum.

The marked artistic success of the exhibit, especially in connection with the Arctic work of the Signal Corps, is largely due to the exertions and ability of Mr. Albert Operti.

SIGNAL EQUIPMENTS.

The equipment of field glasses, for years sadly deficient, has been gradually increased, so that there is now 1 field glass for every 4 line officers, instead of 1 to every 15, as in 1887.

The field glass for ordinary issue, a 6-lens, low-power glass, selected by a board of experts from about 150 different patterns, is as good a glass

as can be obtained for general use, but it is necessarily a compromise. It is impracticable to obtain sharp definition, high power, good light, and extended field in any single glass; consequently these qualities have been combined with a regard to their importance in the order given above. There are on hand for special use some glasses of sharp definition and high power (i. e., seven times the capacity of the unassisted eye). Most of the field glasses are in aluminum frames, as their lightness enables the observer to better use the glass free hand. If these frames prove durable they will ultimately replace the brass.

Upon the recommendation of a board of officers of this corps, a shoulder belt for carrying the field glass of the Signal Corps has been adopted. The model has been approved by the Secretary of War and made part of the Army Regulations, so that the field-glass case can now be worn without its detracting from the military appearance of officer or enlisted man, while the comfort of the individual and the safety of the glass are assured.

Binoculars, including opera glasses, field glasses, etc., are liable either from fall or other cause to become slightly twisted and show two objects instead of one. The confusion to the vision thus caused is very annoying and renders the instrument almost useless. The double image is caused by a twist in the barrels at their junction with the middle branch, these two parts being spun into each other and not brazed in any way. The following instructions for adjusting decentered binoculars were supplied to this office by Queen & Co., of Philadelphia:

"To produce a single image with a twisted field glass, grasp each barrel firmly with the hands in the usual way, excepting that the thumbs should not be used. Look through the instrument and bring into focus any well-defined object which has some horizontal line. Without moving the instrument look at an object some distance farther off; the eye will then see in duplicate the object first observed, one higher than the other. If the right-hand object be the higher, slowly twist the right-hand barrel in the direction of the motion of the hands of a clock until the two objects unite and form one clear and well-defined object. If the left-hand object, as above described, should be the higher, the process of adjusting is exactly the same, except that the left-hand barrel should be twisted in the direction of motion *opposite* to that of the hands of a clock."

The corps has now 300 serviceable field and station heliographs, the former carrying a mirror $4\frac{1}{2}$ inches square and the station a mirror 8 inches square. There were called in from the military posts 44 heliographs of an obsolete pattern, which, upon recommendation of the Inspector-General of the Army, have been issued to officers detailed as professors of military science and tactics. Great interest has been taken at such colleges and the demands for instruments far exceed the limited supply.

SIGNAL LANTERN.

The procuring of a lantern for night signaling to replace the cumbersome and undesirable torch, while apparently a simple problem, yet in reality is a most difficult one. The complicated heliograph and telephone-telegraph instruments have been thought out, improved, and perfected, while the lantern is still in an experimental stage.

With a view of utilizing the experience of lamp manufacturers, proposals were asked for the construction of a suitable lantern. The requirements were not considered particularly difficult to accomplish and a bonus of \$250 was offered for an acceptable sample lantern.

Although these invitations were extensively distributed, not a bid was submitted.

One of the largest manufactories of lanterns generously made several models at its own expense, but frankly admitted its inability to construct one meeting the requirements. In this contingency the Signal Corps has had recourse to its own officers. The promotion of Capt. Kilbourne ended his investigations in this direction, and First Lieut. Samuel Reber, Signal Corps, has been assigned the problem, with directions to push the work. He has already studied and determined the scientific elements of the problem, conducted laboratory experiments, and made practical tests, so that his preliminary report gives ground for the hope that the close of 1895 will find the Signal Corps equipped with a lantern as efficient in its sphere as are the other appliances of the corps for visual and acoustic signaling.

PERSONNEL OF THE CORPS.

The personnel of the officers of the Signal Corps has remained the same during the year, with the exception of the promotion of Capt. Charles E. Kilbourne, one of the most valued officers, to be major in the Pay Department of the Army. The vacancy thus created was filled from the line of the Army after a competitive examination, the successful candidate being First Lieut. Samuel Reber, Ninth U. S. Cavalry.

Maj. H. H. C. Dunwoody, who has performed no military duty with his Corps since his promotion thereto, has remained on detached service in charge of the forecast work of the Weather Bureau, the honorable Secretary of Agriculture stating that his services could not be spared without detriment to the public service.

At the end of the year other officers were serving as follows:

Capt. Robert Craig, disbursing officer and assistant; Capts. James Allen, R. E. Thompson, W. A. Glassford, and First Lieut. Frank Greene, chief signal officers of departments; Capt. George P. Scriven, with the Bureau of Military Information; First Lieut. J. E. Maxfield, in charge of the school of instruction at Fort Riley, Kans., and First Lieut. Samuel Reber, conducting important experimental work preparatory to assuming charge of the school of instruction at Fort Riley.

Ten sergeants reenlisted during the year, 1 sergeant retired, 1 died, and 1 was discharged. Two vacancies were filled by the transfer of meritorious noncommissioned officers from the line of the Army, carefully selected from a large list of applicants, and the third vacancy by the enlistment of a former sergeant of the corps.

THE NATIONAL MILITIA.

Every opportunity has been improved to cultivate cordial relations with the militia and national guard of the various States. The interest in signaling which developed several years ago in the national guard of the several States has proved to be permanent. Requests for equipments are frequent, despite the negative answers necessarily made. Information is always gladly given, but unfortunately the Signal Corps is not authorized under existing law to issue equipments to the militia. Over half the States have asked for signal equipments and stores with the desire that the cost thereof should be charged against their allotment of the permanent appropriation made by Congress for the militia. Despite the inability of the militia to procure signal equipments under the same regulations governing the issue of other military stores, signal corps have been organized in several States, although necessarily equipped at private expense.

MILITARY COLLEGES.

Great interest in military signaling is taken by the students at many colleges throughout the country. Thirty-six of these colleges, at which officers of the regular Army have been detailed as professors of military science and tactics, have been supplied with small flags, codes, and instructions relative to signaling. Twenty-two of these colleges have been furnished a set of heliographs of a style now inadequate to cover the ranges over which the Signal Corps can work with the modern heliograph.

EXAMINING DIVISION.

The work of the examining division is in a most satisfactory condition, being entirely up to date. The recent legislation regarding property accountability and money accounts has not materially affected the methods of this office, which, by previous law, were similar to those now enacted for the Army at large. The officers of the Army have rendered their returns of property and money accounts with unusual regularity and commendable accuracy.

DISBURSING DIVISION.

The report of Capt. Robert Craig, Signal Corps, as disbursing officer, forms Table C, and contains such information regarding contracts and disbursements as is required by law and regulations. In addition to his duties as assistant, and as disbursing officer, Capt. Craig has had charge of the general supply depot of the Signal Corps. Necessarily a large amount of clerical work has devolved upon him. His own clerical labors have been supplemented by those of his storekeeper and assistants, who have been diverted from their special duties to an extent prejudicial to the interests of the public service. A clerk for the disbursing officer is greatly needed, and an estimate for a clerk of class 2 for duty with the disbursing officer has been submitted, and it is hoped that Congress will give the much-needed relief.

In this office fidelity, zeal, and application have characterized the clerical force, who are inadequate in numbers only. The two clerks of class 1 do work of a character that should insure increased pay, especially as promotion is practically impossible.

WAR DEPARTMENT LIBRARY.

In obedience to the instructions of the Secretary of War, the Chief Signal Officer assumed supervisory charge of the War Department Library, March 31, 1894.

The library is now being developed along professional lines and in the interest of the Army at large, the only just and proper procedure, since the library has always been maintained from appropriations for the support of the Army.

Systematic and successful attempts are in progress looking to the accumulation, by exchange or gift, of military literature, especially in connection with American wars. Exclusive of the public documents and Government publications in general, there have been added to the library 1,728 books and pamphlets of which 1,528 were added since March 31. Of this number, 476 were acquired by purchase and 1,502 received as gifts, principally from various military and historical organizations of the country. An average of 55 volumes have been

loaned daily for reading or consultation. In addition, there have been extensive personal researches on the part of the library force for official purposes. About 30,000 books, pamphlets, etc., consisting very largely of Government publications and a large number of photographs, have been turned over to the library by the several bureaus of the War Department. While far the greater portion of this material is worthless, its assortment, arrangement, and distribution have progressed extremely slow with the present limited force, especially as the greater part of the works have to be scrutinized by the librarian or myself to pass on their value or utility.

The library was originally catalogued under the author system, but recent additions have been rearranged under subjects. This method will be extended to all the professional literature of the library; a tedious work, but one that in the end will be the most economical and efficient.

The library force has been reduced 40 per cent, from five to three, and can not be further reduced without detriment to the public service. One clerk now serving by temporary detail should be permanently provided for in the coming estimates, as special aptitude, supplemented by considerable length of service, is essential to efficient work in a large library.

As authorized by the Secretary of War, arrangements have been made for the extension of the benefits of the library to the officers serving at posts, and while the plan has been in operation only since the close of the fiscal year, it is well to say that many officers serving at remote posts have already availed themselves of this opportunity of extending and supplementing their professional studies.

APPROPRIATIONS.

The cost of instruments and supplies sent in response to requisitions from the Army for signal stores was \$16,914.18. When it is considered that in the above is not included the cost of operation, material, or instruments for the operation of the permanent telegraph lines under the control of the Signal Corps, the economy exercised in the purchase and issue of signal stores from the small appropriation for the corps may be understood.

The reduction of current appropriations about 20 per cent makes it evident that only by the utmost economy and care can the Signal Corps work of the Army be carried out. It is unfortunate, at a time when not only the absolute necessity of a skilled body of signalists has been demonstrated by the demands upon the corps at Chicago, but also the insufficiency of the number of men and amount of material for any extended operations, that Congress should reduce the appropriations and thus further restrict the operations of an absolutely essential corps in future field service.

A. W. GREELY,
Brigadier-General and Chief Signal Officer, U. S. Army.

A.

BUSINESS TRANSACTIONS OF THE U. S. MILITARY TELEGRAPH LINES FOR YEAR
ENDING JUNE 30, 1894.

*Cash receipts at each station on the U. S. military telegraph lines during the year ended
June 30, 1894, on account of Government tolls.*

Department of the Colorado:	
Carthage, N. Mex	\$50. 43
Fort Apache, Ariz	57. 06
Fort Bowie, Ariz	9. 06
Fort Du Chesne, Utah	91. 41
Fort Grant, Ariz	48. 17
Fort Stanton, N. Mex	50. 22
Holbrook, Ariz	44. 43
Price, Utah	56. 01
San Carlos, Ariz	79. 60
Taylor's Ranch, Utah	5. 32
Willcox, Ariz	141. 89
Department of Texas:	
Fort Brown, Tex.	276. 31
Carrizo, Tex *	28. 23
Fort McIntosh, Tex.	78. 68
Fort Ringgold, Tex *	339. 21
San Ygnacio, Tex *	8. 45
Department of Dakota:	
Bismarck, N. Dak	71. 67
Fort Custer, Mont.	49. 95
Fort Yates, N. Dak	48. 44
Total	1, 534. 54

* Operation six months.

*Money value of free messages sent; also, the aggregate of business transacted on the mili-
tary telegraph lines at each station during the year.*

Stations.	Money value of free mes- sages sent.	Number of commer- cial mes- sages sent.	Number of commercial messages received.	Number of free messages sent.	Number of free messages received.	Total number of messages handled.
Department of the Colorado:						
Carthage, N. Mex	\$27. 03	489	469	141	199	1, 298
Fort Apache, Ariz	641. 54	527	386	1, 444	1, 285	3, 642
Fort Bowie, Ariz	77. 78	110	117	222	225	674
Fort Duchesne, Utah, ...	33. 49	850	512	197	175	1, 734
Fort Grant, Ariz	600. 78	404	451	1, 632	1, 913	4, 400
Fort Stanton, N. Mex ...	78. 04	475	497	225	154	1, 351
Holbrook, Ariz	108. 75	245	331	392	655	1, 623
Price, Utah	60. 31	647	990	161	148	1, 946
San Carlos, Ariz	421. 73	540	472	1, 123	1, 068	3, 203
Taylor's Ranch, Utah ....	. 50	50	20	5	7	82
Willcox, Ariz	590. 45	828	788	2, 058	1, 786	5, 460
Department of Texas:						
Fort Brown, Tex	232. 25	1, 605	1, 764	937	1, 118	5, 424
Carrizo, Tex	20. 14	170	125	72	66	433
Fort McIntosh, Tex	56. 31	418	521	273	459	1, 671
Fort Ringgold, Tex	403. 46	1, 648	1, 588	1, 381	1, 280	5, 879
San Ygnacio, Tex	15. 20	53	55	76	62	246
Department of Dakota:						
Bismarck, N. Dak	106. 14	752	918	484	575	2, 729
Fort Custer, Mont	104. 77	640	483	656	1, 972	2, 360
Fort Yates, N. Dak	122. 23	918	752	575	484	2, 729
Department of the Platte:						
Fort McKinney, Wyo.	49. 06	880	651	141	130	1, 802
Fort Washakie, Wyo	(*)	(*)	(*)	(*)	(*)	(*)
Department of the Missouri:						
Fort Reno, Okla	32. 53	446	424	211	197	1, 271
Fort Sill, Okla .....	.....	543	491	514	471	2, 019
Fort Supply, Okla	(*)	(*)	(*)	(*)	(*)	(*)
Total	3, 791. 49	13, 238	12, 805	12, 920	14, 429	51, 906

* No record.

B.

The following tabulation shows the number of officers and enlisted men in each regiment who are proficient in signaling as defined by Army Regulation 1761:

Regiment.	Officers.	Enlisted men.	Total.	Regiment.	Officers.	Enlisted men.	Total.
Cavalry:				Infantry—Cont'd.			
First	7	26	33	Fifth	10	39	49
Second	9	67	76	Sixth	9	34	43
Third				Seventh	7	8	15
Fourth	3	22	25	Eighth	6	26	32
Fifth	10	51	61	Ninth	8	41	49
Sixth	11	33	44	Tenth	7	24	31
Seventh	6	25	31	Eleventh	11	22	33
Eighth	12	74	86	Twelfth	6	32	38
Ninth	11	41	52	Thirteenth	7	20	27
Tenth	6	61	67	Fourteenth	5	24	29
Artillery:				Fifteenth	1	23	24
First	11	55	66	Sixteenth	8	33	41
Second	13	30	43	Seventeenth	8	31	39
Third	11	58	69	Eighteenth	5	8	13
Fourth	8	42	50	Nineteenth	10	51	61
Fifth	18	99	117	Twentieth	5	43	48
Infantry:				Twenty-first	11	28	39
First	16	33	49	Twenty-second	8	3	11
Second	8	30	38	Twenty-third	13	46	59
Third	8	19	27	Twenty-fourth	5	30	35
Fourth	4	20	24	Twenty-fifth	10	26	36

Recapitulation.

Arm of service.	Reported proficient.		Total.
	Officers.	Enlisted men.	
Cavalry	75	400	475
Artillery	61	284	345
Infantry	196	694	890
Total	332	1 378	1,710

The number of hours given to instruction and practice in the different military departments is as follows:

	Day.	Night.	Total.	Average number of hours per man.*
California	2,111	31	2,142	2
Columbia	2,257	145	2,402	2.1
Colorado	5,443	48	5,491	2.1
Dakota	13,415	567	13,982	5
East	18,396	254	18,650	3.6
Missouri	8,335	173	8,508	3.1
Platte	5,804	577	6,381	3.4
Texas	3,168	107	3,205	2.1
Total	58,929	1,902	60,831	.....

* Assuming that 75 per cent of the aggregate of each regiment was available for instruction.

C.

WAR DEPARTMENT, SIGNAL OFFICE,
Washington, D. C., September 22, 1894.

SIR: I have the honor to submit the following report for the fiscal year ending June 30, 1894:

* * * * *

ESTIMATES.

As required by law, estimates for appropriations for the fiscal year ending June 30, 1894, were submitted to the Secretary of War on August 18, 1893. The estimates for signal service of the Army, including the military telegraph lines, were reduced from \$22,000 to \$21,500. Estimates for deficiencies have not been necessary. A special estimate of \$960 for the construction of a military telegraph line from El Paso, Tex., to new Fort Bliss, Tex., was submitted April 30, 1894.

In the estimates for clerks there was submitted an item for one clerk of class 2, with a view to having the services of a clerk in the preparation of the money and property papers of the disbursing officer, but it was omitted by the Secretary of War in the estimates submitted to Congress. As a clerk is very much needed to relieve me from clerical labor, and one officer has been relieved from duty at this office, and that I may devote some time to more important matters, I urgently recommend that an effort be made to secure an appropriation for such clerk.

* * * * *

There have been filled requisitions for property from 21 telegraph stations and 93 Army posts to the number of 286. At the close of the year 4 requisitions remained unfilled, owing to time required in removing office.

CONTRACTS AND LEASES.

No leases were made during the year. As required by act of Congress approved April 21, 1808 (Stat. L., vol. 2, p. 435), I submit herewith a list of contracts made during the fiscal year ended June 30, 1894:

Contracts.

With whom made.	Place.	For what purpose.
The E. S. Greeley & Co.....	New York City.....	Iron telegraph poles.
Thompson G. Gill & Co.....	Philadelphia, Pa.....	Telegraph wire.
Western Electric Company.....	New York City.....	Insulator plugs.
The E. S. Greeley & Co.....	do.....	Steel gas tubes.
Do.....	do.....	Glass insulators.
Royce & Marean.....	Washington, D. C.....	Bluestone and zincs.
The E. S. Greeley & Co.....	New York City.....	Field train supplies.
J. H. Bunnell & Co.....	do.....	Telegraph instruments.
Royce & Marean.....	Washington, D. C.....	Telegraph wire.
F. P. Nash.....	do.....	Insulator plugs.
Gethins Electrical Manufacturing Co...	Boston, Mass.....	Gethins batteries.
D. Ballauf.....	Washington, D. C.....	Repairing heliographs.
Levy, Dreyfus & Co.....	New York City.....	Field glasses.
Homer P. Beach.....	do.....	Stationery.
Manhattan Supply Company.....	do.....	Clocks, etc.
The Friedenwald Company.....	Baltimore, Md.....	Stationery.
Chas. A. Muddiman.....	Washington, D. C.....	Lamp chimneys, etc.
The E. S. Greeley & Co.....	New York City.....	Stationery.
Easton & Rupp.....	Washington, D. C.....	Do.
Geo. Ryneal & Co.....	do.....	Dust brushes, etc.
Wm. Ballantyne & Sons.....	do.....	Stationery.
Detre & Blackburn.....	Philadelphia, Pa.....	Do.
E. J. Brooks & Co.....	New York City.....	Do.
John Schultzbach.....	Washington, D. C.....	Repairing instruments.
Thompson C. Gill & Co.....	Philadelphia, Pa.....	Practice kits.
G. B. Carpenter & Co.....	Chicago, Ill.....	Signal flags.
The E. S. Greeley & Co.....	New York City.....	Hard rubber insulators.
Manhattan Supply Company.....	do.....	Do.
Morrison, Plummer & Co.....	Chicago, Ill.....	Sulphuric acid.
Hummiston, Keeling & Co.....	do.....	Wood cask.
Excelsior Manufacturing Company.....	St. Louis, Mo.....	Iron filings, etc.
F. Kroedel & Son.....	New York City.....	Anemometer register.
Queen & Co., Incorporated.....	Philadelphia, Pa.....	Do.
Manhattan Supply Company.....	New York City.....	Wicking.
Franklin & Co.....	Washington, D. C.....	Field glasses.
Manhattan Supply Company.....	New York City.....	Silicon bronze wire.
The Ralston Iron Works.....	San Francisco, Cal.....	Wire bobbins.
John Schultzbach.....	Washington, D. C.....	Repairing instruments.
R. C. M. Burton.....	do.....	Wagon cover.
Western Electric Company.....	New York City.....	Condensers.
J. P. Friez.....	Baltimore, Md.....	Anemometer register.
The E. S. Greeley & Co.....	New York City.....	Telegraph switch board.
F. P. Nash.....	Washington, D. C.....	Wire reels.
W. B. Moses & Sons.....	do.....	Linoleum.
Sam P. Wreford.....	Laredo, Tex.....	Constructing telegraph line.

SHIPMENTS AND RECEIPTS

There have been made to stations and military posts 3,635 shipments by mail and 70 (260 boxes) through the Quartermaster's Department. There have been received from contractors 239 consignments, and from stations and military posts 103.

SALES OF CONDEMNED PROPERTY.

On March 5, 1894, at Washington, telegraph and other instruments, tools and other articles, \$39.

ACCOUNTS SETTLED.

The number of accounts settled during the year is:

Month.	Num-ber.	Month.	Num-ber.
July	43	February	34
August	34	March	49
September	42	April	34
October	56	May	69
November	42	June	40
December	41		
January	46	Total	530

* * * * *

ACCOUNTS UNSETTLED.

On June 30, 1894, there were in the office 34 unsettled accounts—6 for want of completion, 28 on account of time being taken up in moving office.

INSPECTION OF MONEY ACCOUNTS.

My money accounts were inspected and the balance verified by Lient. Col. G. H. Burton on October 17, 1893, and February 2, 1894, and by Maj. J. P. Sanger, inspector-general, on June 23, 1894.

* * * * *

D.

LIST OF PRINCIPAL ARTICLES IN ARCTIC EXHIBIT OF SIGNAL CORPS AT WORLD'S COLUMBIAN EXPOSITION AT CHICAGO, 1893.

Greely relics.

Admiralty Manual of Scientific Inquiry, found at Cape Sabine in *Proteus* wreck cache.

Ax, used by the Greely party for three years in arctic region. This was the implement used for digging the graves at Camp Clay. It was also indispensable in preparing material for the walls of winter quarters of 1883.

Body belt, worn by Lynn on the hazardous mission to Cape Isabella in 1883; also during the retreat, and at Camp Clay until his death.

Can opener, left at Cape Sabine by Sir George Nares in 1875.

Coat lined with skin of eider duck, used by Lieut. Greely at Fort Conger, on the retreat to Cape Sabine, and at Camp Clay when rescued.

Dog-skin gloves, used by Private Henry on the retreat from Fort Conger. Originally owned by Dr. Pavy.

Flag, the Greely arctic. This flag was made by Mrs. A. W. Greely, and was intrusted to Octave Pavy, M. D., and was carried by him to Greenland in a private arctic expedition in 1880. Dr. Pavy delivered it to Lient. A. W. Greely at Ritenbenk, Greenland, in July, 1881. The flag was carried in May, 1882, by Lieut. Lockwood, Twenty-third Infantry, to latitude 83° 24' N., longitude 40° 46' W., and was there unfurled by him at the nearest point to the North Pole ever attained by man. In the summer of 1882 the flag was carried by Lieut. Greely into the interior of Grinnell Land, and was unfurled by him, July 4, from the highest point in Grinnell Land, the summit of Mount Chester A. Arthur, 4,500 feet above the sea. In 1883 it was carried to the shores of the polar ocean north of Greenland by Lieut. Lockwood, thence south-

west across Grinnell Land to the western polar ocean, where it was unfurled on the shore of Greely Fiord, May 16. The flag was also displayed on the launch *Lady Greely* on a trip made during the summer of 1882 into Weyprecht Fiord to the head of Lady Franklin Sound, and down Kennedy Channel to Cape Craigcroft, and during the retreat from Fort Conger to Cape Sabine in the autumn of 1883. The flag has been four years within the arctic circle.

Relics of the Arctic expedition of Sir John Franklin, recovered by party under Lieut. Frederick Schwatka, U. S. Army, and loaned by the National Museum, Washington, D. C.

Three spoons and 1 fork, 3 scissors, 2 watch cases, 1 gimlet, needle and button, bottle, human hair and pieces of cloth, pieces of brass tubing, copper sheathing, fur suit, surgical instruments and photograph, writing case, barometer case, sword and scabbard, flint lock and shotgun, piece of mast, fragments of flagstaff, file, part of boat, sledge runner.

Relics of Hall's first expedition.

Bundle of arrows, tape measure, opera-glass case, 2 tablets, iron chisel, pair of gloves, writing tablet, 1 mahogany box, with pipe, paint brushes, paper-cutter, and miscellaneous collection, autograph papers, canvas bag, lead line and reel, double-barrel gun, copper writing tablets, boat log, single-barrel gun, letter from Eskimo Joe, empty bottle, photograph Eskimo Hannah, photograph Eskimo Joe, canvas drinking cup.

The above-enumerated relics of Hall were also loaned by the National Museum, as were relics of the Jeanette, Grinnell, Perry, and Ross expeditions. The American Geographical Society, of New York, also loaned relics of the Hayes, Ross, and Grinnell expeditions, and the figure-head of the brig *Advance*, of Dr. Kane's expedition, was loaned by Kane Lodge, of New York. Dr. T. H. Bailey, of New York, also loaned interesting relics of the Franklin expedition.

**REPORT OF THE CHIEF OF THE RECORD
AND PENSION OFFICE.**

REPORT

OF THE

CHIEF OF THE RECORD AND PENSION OFFICE.

RECORD AND PENSION OFFICE,
WAR DEPARTMENT,
October 1, 1894.

SIR: The history of this office for the past year is in the main a repetition of its history of former years. As formerly, the current work has been kept up to date and the clerical force not required for this purpose has been constantly employed upon the work of reproducing, by the index-record card system, the military records relating to the personnel of the volunteer armies.

As predicted in the last annual report of the office, the current work has considerably increased during the past year, especially in the number of pension cases received and disposed of, the number of these cases received during the year ended June 30, 1894, being nearly thirty-three thousand in excess of those of the same class received during the preceding year.

The total number of cases of all classes received and disposed of during the fiscal year was as follows:

From the Pension Office.....	170, 301
From the Second Auditor's Office.....	20, 327
Remuster cases	3, 331
Desertion cases	3, 731
All other cases, miscellaneous	22, 251
Total	219, 941
On hand June 30, 1894.....	None.

It is evident from these figures that the volume of work connected with the service of the volunteer forces is not likely to be materially diminished for some years to come, especially when it is considered that an appreciable part of the present current business relates to service rendered during the various Indian and other wars preceding the war of the rebellion.

As remarked in the last annual report, the labor of the office has been considerably augmented by the act of July 27, 1892, giving a pensionable status to the survivors of the Indian wars and their dependents, and the work especially belonging to this Bureau has been still further increased by the recent transfer to it from other bureaus of the Department, under the orders of the Secretary of War of May 15 last, of the Confederate archives, the general returns of the Army relating wholly or in part to the volunteer forces, the records relating to the appointment, commission, and personnel of the general and staff officers of the volunteer forces, and of "all records, files, books, manuscripts, orders,

returns, or correspondence in any Bureau that pertain exclusively or principally to the volunteer forces of any war or the officers and enlisted men thereof." These records, it may be here remarked, have been placed on file, and are being put in the best possible order for easy and ready reference, with a view to embracing them in the general index-record card system adopted for the records of the volunteer forces.

REMOVAL OF CHARGES OF DESEPTION.

As already stated in this report 3,731 desertion cases have been received and adjudicated during the past year. These figures represent the actual number of applications received for removal of the charge of desertion under the provisions of the act of Congress approved March 2, 1889, as modified and extended by the acts of March 2, 1891, and July 27, 1892, including renewals of applications previously filed. But they do not embrace the large number of cases encountered in the preparation of military histories for the Commissioner of Pensions and the accounting officers of the Treasury, in which the charge of desertion has been incidentally discovered. These cases have been considered under the law, and where clearly embraced by its provisions the charge of desertion has been removed. Including this class of cases, the whole number of cases adjudicated under the acts cited during the last fiscal year reaches a total of more than nine thousand.

On the 1st of July last the act under which these cases have been considered expired by statutory limitation. It had been thought that on the expiration of the time limit for filing applications for relief most of the meritorious cases would have been adjudicated, but many cases are still being presented, both by direct application and incidentally through calls from bureau officers of other Departments, which are equally as meritorious as those in which the relief provided by the statute has been extended. It is to be noted also that the cases now arising involve, in numerous instances, the interests of widows and orphans who are ignorant of the existence of the charge of desertion, and who, therefore, have not availed themselves of the benefits of the law.

Bills were introduced in both Houses of Congress during the last session, extending for two years the time for filing applications under the act of March 2, 1889, and upon one of these a favorable report was made by the Secretary of War to the Congressional committee having the bill in charge, but the object in view did not receive the sanction of legislative enactment.

REMUSTER.

The time for filing claims under the act of Congress approved June 3, 1884, as amended by the act of February 3, 1887, and extended by the acts of August 13, 1888, and February 9, 1893, will expire on the 3d of June next, unless further extended by legislative action. These acts provide payment for services rendered as commissioned officers by persons who were not recognized by their muster into service, as of the grades to which commissioned, at and for the time the service was performed. This legislation is based upon principles of equity and justice, providing compensation only for service actually rendered in good faith, and for which the United States has received the benefit, in a majority of cases by active service in the field; and as the number of applications for the recognition by this Department requisite to secure payment under the law numbered during the last fiscal year eleven hundred more than during the preceding year, indicating that there are

many deserving cases yet unadjudicated, it would seem that the time for filing claims should, as a necessary act of justice, be still further extended.

INDEX-RECORD CARD WORK.

The work of reproducing the individual military records of officers and enlisted men by the index-record card system has been somewhat retarded by a reduction of the clerical force and the difficult character of the records upon which this reduced force has been engaged, but notwithstanding these drawbacks very satisfactory progress has been made. At the date of the last annual report there remained to be carded, of the organization rolls of the military forces of the late war, a portion of those of the State of Illinois, and those of the Veteran Reserve Corps and United States Volunteers, besides the post, detachment, and miscellaneous rolls. At the close of the fiscal year ended June 30, 1894, all of the volunteer organization rolls of the war of the rebellion had been carded, besides the hospital muster rolls, rolls of deserters arrested, and numerous miscellaneous rolls, and work had been begun on the company and regimental descriptive books. The carding of the latter class of records has now been completed, and work on the regimental returns is in progress.

During the fiscal year 6,024,667 military cards and 2,727 medical cards were added to the former total of cards made and filed, increasing the aggregate to 41,127,149 cards now on file and available for use in the current work of the office.

The act of Congress approved July 27, 1892, providing "that the military records of the American revolution and of the war of 1812," then "preserved in the Treasury and Interior Departments, be transferred to the War Department, to be preserved in the Record and Pension Division [Office] of that Department, and that they shall be properly indexed and arranged for use," was supplemented by a provision of the sundry civil appropriation bill approved August 18, 1894, "that all military records, such as muster and pay rolls, orders, and reports relating to the personnel or the operations of the armies of the Revolutionary war and of the war of eighteen hundred and twelve now in any of the Executive Departments, shall be transferred to the Secretary of War to be preserved, indexed, and prepared for publication."

The transfer of records contemplated by the act of 1892 is now in progress, the rolls of the military forces of the Revolutionary war heretofore filed in the office of the Commissioner of Pensions having already been received at this office, and it is expected that there will be little or no delay in the further transfers required by the legislation referred to.

The work of reproducing these old records by the index-record card system will be entered upon without unnecessary delay.

INDEX-RECORD CARD SYSTEM.

The method of reproducing, consolidating and arranging the individual records of officers and enlisted men by the index-record card system, and the application of the same system to the records of the current work of the office, were described in detail in the annual reports of this office for 1890 and 1892.

While the advantages of this system as applied to individual records of military service are too manifest, when fully understood, to invite serious criticism, the utility of the substitution of record cards for the

books of letters received and letters sent usually kept in a public office is not so apparent and has not been so generally recognized. Five years of experience of this system in this office, where it was devised and first put into practical operation, has, however, demonstrated that for the purposes of a record of current correspondence the card system is superior in every respect to the old system of book records, being much more economical of time and labor in the preparation of the record, and the record itself being very much more easy of access and reference for the practical purposes for which a record is required.

ORGANIZATION AND CLERICAL FORCE.

In 1893 preparations were made for a reduction of the clerical force. As early as April of that year the policy was adopted of leaving unfilled such vacancies as should occur from the usual casualties of the service, and in his estimate, dated August 1, 1893, of appropriations required for the service of the fiscal year ending June 30, 1895, the Chief of the Record and Pension Office stated his belief that by reason of the satisfactory progress of the work of carding the military records a reduction of 300 clerks could be made without detriment to the public interests.

This estimate was approved by the Secretary of War, and the appropriation for the current fiscal year was made in conformity therewith, varying only in the provision made for a few clerks transferred, with records, from other bureaus. The clerical force now provided for by law consists of 500 of all grades, being a net reduction of 292 clerks and representing an annual saving of \$334,200 in salaries alone.

By the policy adopted of leaving vacancies unfilled the personal hardship necessarily connected with so large a reduction of force was very much lessened, but 140 discharges being required to bring the force within the limit prescribed by the new appropriation.

It was at the time a matter of regret that, owing to a continuation of the old appropriation into the new year and the somewhat prolonged uncertainty as to the date on which the regular appropriation for the new year would take effect, the surplus force was dropped from the rolls without the usual leave of absence with pay, but it was thought humane to keep the clerks as long as there was legal authority for their payment, and Congress has now remedied any apparent hardship by adding to their compensation (by act of August 18, 1894) payment of their salaries for the number of days of leave of absence not used by them up to the date of their discharge.

In connection with the general subject of the reduction of the clerical force it is deemed proper to state that the selections for discharge were based strictly upon the efficiency records of the clerks, a liberal allowance being made in the ratings on account of honorable military or naval service and long and faithful service in the Department.

The statute (sec. 3, act of August 15, 1876; 19 Statutes, p. 169) provides "that in making any reduction of force in any of the Executive Departments the head of such Department shall retain those persons who may be equally qualified who have been honorably discharged from the military or naval service of the United States." But in the reduction of force made necessary by the recent appropriations a much greater preference than that required by the law was given to persons of this class. The duty of making selections of those to be recommended for discharge was, with the approval of the Secretary of

War, confided to the efficiency board of the office, in an order of which the following is a copy:

"RECORD AND PENSION OFFICE,
"WAR DEPARTMENT,
"Washington City, June 15, 1894.

"With a view to preparing for the reduction which must be made in the clerical force of this office under the terms of the pending legislative, executive, and judicial appropriation bill, the efficiency board of the office will carefully examine the records of work, department, and attendance of all employees of the office, and will report as soon as practicable the names of those who, in the opinion of the board, should be discharged or reduced in grade so as to meet the requirements of the pending bill.

"In order that no injustice may be done to anyone, the investigation will be made as thorough and exhaustive as possible in each case, and to this end the board will be given free access to any and all records of the office, and it is authorized to call upon clerks in charge of divisions and sections for such information as it may deem necessary.

"A record of honorable military service, or of long and faithful service in the Department, should be given great weight in favor of any employee, and no person having such a record should be recommended for discharge unless it is apparent that his retention in office will work manifest injury to the public service.

"F. C. AINSWORTH,
"Colonel, United States Army, Chief, Record and Pension office."

The board, composed of eight of the principal clerks, a majority of whom are themselves old soldiers and may fairly be presumed to be in sympathy with their fellow clerks and comrades, faithfully obeyed the instructions given, and in making up its discharge list added five points to the final efficiency figure of every clerk with a record of honorable military or naval service, thus giving clerks of this class a very great advantage in rating over other clerks having the same actual record of efficiency but not having a record of service in the Army or Navy. The result of this liberal allowance in their favor was to save from discharge many old soldiers who would otherwise have fallen below the line to which discharges had to be carried.

There is probably no bureau of the Government in which a greater proportionate number of ex-soldiers is employed than in this, but as a result of the method of selection adopted only 33 of the 140 clerks discharged in order to reduce the clerical force to the limit allowed by law were of this class.

Since the date of the last report a material change has taken place in the organization of the office, its former divisions having, in conformity with orders of the Secretary of War of May 15 and June 21, 1894, been consolidated into seven, with designations and assignment of duties and records as follows:

1. Mail and Record Division, the duties of which include the receipt and mailing of all communications, the press-copying of letters in answer to the same, the briefing of the official mail, and the preparation and custody of the record and index cards pertaining to the current correspondence.

2. Correspondence and Examining Division, the business of which includes the drafting of correspondence and the examination and submission to the chief of the office of all questions requiring special administrative action.

3. Regimental Records Division, having in charge the military records of officers and enlisted men of volunteer regiments and other minor volunteer organizations and the preparation of reports therefrom.

4. Archives Division, having charge of the general military records of the volunteer armies, and the confederate archives, and the preparation of reports therefrom.

5. Medical Division, having charge of the medical and hospital records and the preparation of reports therefrom.

6. Seventeenth Street Branch, having charge of the records stored in the building which it occupies, and of the work of repairing and consolidating rolls, returns, books, and other records requiring such treatment.

7. Tenth Street Branch, having charge of the work of reproducing and preserving the records of the volunteer armies by the index-record card system.

The building on Tenth street known as the Ford's Theater building, which was wrecked in June, 1893, with such disastrous results to some of the clerks employed therein, has been fully restored, under the authority of Congress, in accordance with a plan recommended by a board of engineer officers for the purpose of making the building entirely safe and putting it in good sanitary condition. With its improved lighting apparatus it is well adapted to clerical purposes. It was turned over to this office in the latter part of July last by the engineer officer under whose direction the repairs were made, and was reoccupied on the 28th of that month.

With the exception of relieving the injured from the operations of the law restricting the amount of sick leave that may be granted with pay, no provision has yet been made by Congress for the sufferers by the disaster of last year, but the question of compensation is now in the hands of a joint commission of the two Houses, and it is hoped that as a result of their deliberations full justice will be done these deserving people.

Very respectfully,

F. C. AINSWORTH,

Colonel, United States Army, Chief, Record and Pension Office.

THE SECRETARY OF WAR.

REPORT
OF THE
WAR RECORDS' BOARD OF PUBLICATION.

WAR 94—VOL 1—33

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REPORT OF PUBLICATION OF WAR RECORDS.

WAR DEPARTMENT, WAR RECORDS OFFICE,
Washington, August 14, 1894.

SIR: The Board of Publication of the Official Records of the Rebellion begs leave to submit the following report of its operations during the fiscal year ending June 30, 1894:

Eleven thousand copies of Volume XLI, Parts III and IV; XLII, IV; XLII, Parts I, II, and III; XLIII, Parts I and II; XLIV and XLV, Parts I and II, have been printed and distributed during the year ending June 30, 1894, these volumes bringing the work down to the end of the year 1864, and to the opening of the final campaign of the war. The volumes covering the operations of the Appomattox campaign of 1865 are in type, and the manuscript of the volumes necessary to complete Series I is ready for the printer. The first volume of Series II is in type, and is now being indexed. The remaining volumes of the series are well advanced toward completion.

Ten parts of the Atlas, including Plates LXXXI to CXXX (Parts 17 to 27), have been engraved, printed, and distributed during the year. and work upon the nine remaining parts is well on toward completion,

Twenty-one volumes of the edition authorized by the act of August 5, 1892, have been printed and delivered to the document rooms of Congress for distribution, in accordance with the terms of that act.

The examination of files and archives, and the work of selecting, copying, and comparing material for the remaining volumes of the several series has been continued without interruption during the entire fiscal year.

The following notes of work accomplished in the several departments of publication will convey an idea of the variety and amount of labor required in connection with the preparation and publication of the several volumes: One hundred and twenty-one thousand two hundred and fifty-two books have been received and 115,964 have been distributed; 110,000 copies of Parts 17 to 27 of the Atlas to accompany the Official Records of the Rebellion have been received, and 109,786 have been sold and distributed; 11,082 letters, cards, etc., have been received, and 4,017 letters, cards, circulars, etc., have been mailed in response to inquiries; 120,000 labels have been prepared, and 233,376 labels have been compared and verified during the year. During the same period 9 books have been indexed wholly or in part (460,000 cards having been used for this purpose), and the general index to the work has been carried forward to such an extent as to warrant the first volume being put in type during the current calendar year; 59,462

folios of manuscript have been copied and compared; 31,518 pages of proofs, in galleys and page forms, have been examined, and 46,580 sheets of manuscript have been verified, corrected, and prepared for publication.

In closing, it again gives the board great pleasure to recognize the efficient assistance it has received from the officers engaged on the work and from the employees connected with the different departments of the office. Their labors have been zealous and untiring, and the services rendered by them have been entirely satisfactory.

GEO. B. DAVIS,
Major and Judge Advocate, U. S. A.

LESLIE J. PERRY,
Civilian Expert.

J. W. KIRKLEY,
Civilian Expert.

The SECRETARY OF WAR.

**REPORT OF THE BOARD OF COMMISSIONERS
OF THE SOLDIERS' HOME.**

REPORT

OF THE

BOARD OF COMMISSIONERS OF THE SOLDIERS' HOME.

THE SOLDIERS' HOME,
OFFICE OF THE BOARD OF COMMISSIONERS,
Washington, D. C., October 20, 1894.

SIR: In compliance with the requirements of section 1 of the act of Congress approved March 3, 1883, prescribing regulations for the Soldiers' Home in the District of Columbia, I have the honor to submit the following report of the Board of Commissioners of the Soldiers' Home for the year ending September 30, 1894.

The gain and loss in the number of inmates during the year have been as follows:

	Regular.	Tempo- rary.	Total.
On the rolls September 30, 1893.....	1, 007	73	1, 080
Admitted since.....	201	256	457
Readmitted since.....	93	.....	93
Total.....	1, 301	329	1, 630
Withdrawn from the Home	164	.....	164
Dropped, dismissed, etc	90	168	258
Died.....	54	8	62
Transferred to permanent roll.....	.....	81	81
Total.....	308	257	565
Number on the roll September 30, 1894	993	72	1, 065

Of the total number of men (1,065) on the rolls September 30, 1894, 668 were present at the Home; 323 on outdoor relief, 53 on furlough, 3 suspended, 16 in the Government Hospital for the Insane, 1 absent in confinement, and 1 absent without leave.

The daily average number of inmates during the year was 734. Last year the average was 751 and the preceding year 745, showing a small decrease, due in part to the discharge of 29 inmates in receipt of high pensions (\$24 per month and upward) whose disabilities were not of such a character as to make it necessary for them to be continued at the Home.

The total number of deaths reported was 62. Of these 46 died at the Home, 11 while on outdoor relief, 3 in the Government Hospital for the Insane, 1 on furlough, and 1 while suspended.

Temporary relief was granted to destitute discharged soldiers who were not entitled to admission, to the extent of 12,523 meals and lodging for a few nights each to 293 men.

The following statement shows the condition of the permanent fund and the amounts received and expended during the year:

PERMANENT FUND.

Balance in the United States Treasury October 1, 1893.....	\$2, 479, 343. 32
Settlements for the current year.....	\$197, 693. 47
Withdrawn for current expenses	103, 000. 00
Increase of receipts over expenditures.....	94, 693. 47
Balance in the United States Treasury September 30, 1894	2, 574, 036. 79

ACCOUNT OF THE TREASURER OF THE HOME.

Remaining on hand September 30, 1893	\$15, 507. 15
Received during the year:	
From the permanent fund.....	103, 000. 00
Interest on the permanent fund	74, 697. 09
Effects of deceased inmates.	664. 95
Miscellaneous receipts	6, 512. 63
Total	200, 381. 82
Disbursements:	
Current expenses	\$177, 232. 46
Permanent improvements	12, 709. 21
Total.....	189, 941. 67
Balance on hand September 30, 1894.....	10, 440. 15

The foregoing statement shows that the permanent fund has increased by \$94,693.47 during the year, and that the current expenditures were \$19,346.90 less than in the previous year.

The treasurer's account of funds received for the inmate pensioners shows that he had on hand September 30, 1893, \$49,815.34; received during the year, \$95,234.09; paid to pensioners and legal heirs, \$98,436.07 (\$3,201.98 more than he received), leaving on hand, deposited in the United States Treasury, \$46,613.36.

The number of pensioners who are resident inmates of the Home is 582; the number on outdoor relief 230 and 3 suspended, making a total of 815 beneficiaries in receipt of pensions, whose rates are as follows:

Two hundred and eighty-nine receive from \$2 to \$8 per month; 405, from \$10 to \$16; 88, from \$17 to \$20; 32, from \$22 to \$30, and 1 receives \$72 per month.

Taking 560 as the average number of pensioners who were resident inmates, we find that the average amount of pension money paid by the treasurer to each during the year was \$175.77.

In connection with the foregoing statement, attention is invited to the bills introduced, both in the Senate and House of Representatives, during the last session of Congress, amending certain sections of the Revised Statutes, relative to the Soldiers' Home, and providing that all inmates of the Home who receive pensions in excess of \$6 per month shall contribute such excess (in no case exceeding \$8 per month) toward their maintenance in the Home. The propriety and expediency of such a measure was fully set forth in the Commissioners' last annual report, and it is again fully stated by the governor in his report, herewith submitted, as necessary for the good of the Home.

On the night of September 13, last, three separate fires occurred at the Home. The first destroyed a shed and 25 tons of hay in rear of the King Building; the second burned down the stables, 45 tons of hay, 2 horses, and an ambulance, and a horse and buggy belonging to Dr.

Nichols, the assistant to the attending surgeon; the third destroyed a stack of 15 tons of hay. The total loss is estimated at about \$7,000. The manner in which these fires occurred, at three separate points and within an hour of each other, leaves no doubt but that they were the work of one or more incendiaries; and although the Commissioners of the Home have authorized the payment of a reward of \$500 for the arrest and conviction of the person or persons guilty of the crime, the guilty party has not yet been apprehended.

No new buildings have been constructed during the year, but in the coming year it has been suggested a hall should be built for holding meetings, concerts, plays, etc. The hall now used for these purposes, being in the basement of the Sheridan Building, is not suitable, and a commodious hall, specially erected for recreation purposes, is a very much needed improvement.

The Home farm was cultivated, but the yield was not profitable this year, owing to the drought in the early part of the summer; nevertheless, its cultivation compensates the Home in furnishing fresh vegetables in season for the inmates, and in affording useful employment to some of the best class of men at the Home, who receive extra pay for their labor.

The attending surgeon reports that there were 395 patients treated in hospital and 2,791 at sick call; that the sanitary condition of the Home and grounds has been excellent, and that there has been no prevalent or epidemic disease among the inmates during the year.

The act of Congress approved January 16, 1891, requiring the treasurer to keep current funds on deposit in the United States Treasury, has been complied with, and all supplies for the Home which could be conveniently purchased under contract were so obtained.

The library at the Home contains over 6,000 volumes, and 6 daily, 16 weekly, and 6 pictorial papers and 16 magazines are provided—furnishing ample reading matter for the inmates.

Regular meetings have been held by the Board of Commissioners for the transaction of business pertaining to the Home, and monthly inspections were made as required by law.

Brig. Gen. Robert Williams, Adjutant-General of the Army, a member of the Board, was retired from active service November 5, 1893, and was succeeded by Brig. Gen. George D. Ruggles, who was appointed Adjutant-General November 6, 1893.

Brig. Gen. John P. Hawkins, Commissary-General of Subsistence, one of the members of the Board, was retired from active service September 29, 1894, and was succeeded on October 8, 1894, by the appointment of Brig. Gen. Michael R. Morgan, Commissary-General of Subsistence.

The object for which the Soldiers' Home was established—to provide a comfortable refuge for old and disabled soldiers who have served honorably and faithfully for twenty years, and for men who have been wounded or contracted disease in the service, rendering them unable to earn a living by labor—has been steadily kept in view by the Commissioners and the officers on duty at the Home. And considering that among such a large number of men in all classes of civil life there are always many restless and ill-disposed characters, it is not surprising that there should be among the inmates (especially among the younger men of short service) some who utterly fail to appreciate the excellent provision made for their comfortable maintenance. But notwithstanding the occasional violations of discipline which occur, the Home has afforded during the past year, as in previous years, a com-

fortable home to the greatest number of its inmates, who are well behaved and worthy of every consideration.

The accompanying papers are reports by the governor, the attending surgeon, and the treasurer of the Home; a statement of receipts and expenditures; statements of the permanent fund and of the interest account; statements of accounts of the pension money of inmate pensioners and their rates of pension; the debit and credit accounts with the farm and garden, and report of members on outdoor relief—all of which are required to be published for distribution to the Army, as directed by the section and act mentioned in the first paragraph of this report.

Very respectfully,

J. M. SCHOFIELD,
Major-General, Commanding the Army,
President Board of Commissioners.

The SECRETARY OF WAR.

REPORT OF THE GOVERNOR OF THE SOLDIERS' HOME.

GOVERNOR'S OFFICE, UNITED STATES SOLDIERS' HOME,
Washington, D. C., September 30, 1894.

I have the honor to submit my report for the year ending September 30, 1894.

Permanent beneficiaries September 30, 1893.....	1, 007
Admitted during the year.....	201
Readmitted during the year.....	93

Total.....	1, 301
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Dropped:

By withdrawal.....	164
For absence without leave.....	23
Dismissed.....	20
Abandoned the Home.....	2
By order.....	14
Died.....	54
From outdoor relief.....	31
	<u>308</u>

Permanent beneficiaries September 30, 1894.....	993
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Temporary inmates:

Present September 30, 1893.....	73
Admitted during the year.....	256

Total temporary beneficiaries.....	329
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Transferred to permanent rolls.....	81
Dropped.....	163
Dismissed.....	5
Died.....	8

Total.....	257
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Remaining temporary inmates.....	72
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Total beneficiaries.....	1, 065
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Of those, 668 are inmates of the Home, 323 receive outdoor relief, 16 are in insane asylum, 53 are on furlough, 3 are suspended 1 is absent in confinement, and 1 is absent without leave. Decrease for the year of temporary inmates, 1; decrease in the number of regular inmates for the year, 24. The aggregate is 25 less than was shown on last report. Of the 62 deaths reported, 1 died on furlough, 3 died in insane asylum, 35 died in Home hospital, 11 died on outdoor relief, 4 died near the Home, 3 died in their quarters at the Home, 4 committed suicide, and one died outside the Home while on suspension. Daily average number of inmates present during the year, 733½.

TRANSIENTS.

During the year 12,525 meals have been furnished to destitute ex-volunteer soldiers and 293 have been provided with lodgings for a few nights each. Total number applying for readmission during the year, 215; number readmitted, 65; temporarily readmitted, 99; number rejected, 51; total number applying for outdoor relief during the year, 136; outdoor relief granted, 85; outdoor relief denied, 51. Number of inmates present having service in Mexico, 35; number of inmates on outdoor relief having service in Mexico, 131; total, 166. Number of inmates having service in the war of the rebellion, 315; number of inmates on outdoor relief having service in the war of the rebellion, 125. Total, 440.

The affairs of the Home during the past year have been satisfactory, excepting in a few instances to be noted hereafter. The lodging, messing, and cleanliness of the institution have been unexceptional, and the cost has been remarkably cheap. Daily rations, 18½ cents; annual clothing, \$17.62½; annual per capita, \$196.95; milk per gallon, 16½ cents. The food is of the very best and of a variety equal to the average hotel. The question is naturally asked, why this Home with a cheaper ration and clothing bill than the National Homes should show a higher per capita expense than those institutions. It is plainly in the greater expense of keeping up a large tract of park, and the fact that the warming, bathing, the reading, the amusements, the religious services, music, and many other things that go to make up life at institutions of this kind will be much dearer when the expense is divided among 700 men than when divided among 2,500 or 5,000 men. This Home also pays the expense of its insane.

The farm has not done well this season, owing to drought and the hot weather which set in early in June, by which very promising crops were wilted and destroyed. The hay crop was good and although potatoes were damaged, still a yield of 1,885 bushels amply paid for the expense of labor of cultivation. The soil of the Soldiers' Home reservation is poor, and, like all this district, can never be made very profitable for farming, yet it gives employment to a better class of the inmates, and as it is not a loss I recommend its continuance. I recommend the renewal of the dairy as soon as practicable; milk is bought very cheaply by contract, but the amount paid yearly (about \$3,000) would pay for a herd of good cows and the extensive pasture of the reservation now goes to waste. I would suggest the buying of a new herd of best western cows in early spring.

The drives, the walks, and the ornamentation of the grounds of the Home have received due attention, and while the expense of this park adds decidedly to the cost per capita of the Home, the cheerfulness and beauty of the surroundings justify the outlay.

The very just and expedient bill submitted by the Board, and recommended by the Honorable Secretary of War, asking for an act of Congress requiring pensioners receiving more than \$8 per month to pay a moderate allowance for their maintenance—from \$2 per month up to \$8 for pensioners receiving \$16 and upward—failed to pass Congress, although favorably reported by the Military Committee of the House of Representatives. It is to be hoped that this bill will be passed during the next session. The high pensioners in the Home organized a lobby and opposed this bill; their remonstrance was both untruthful and insubordinate, and the bold impudence of these high pensioners shows that the disposal of pensions will be the main feature in the future management of this Home.

In the State Homes one-half of the expense comes from the taxes of the people. This settles the question, and every one of these Homes, 20 in number, collect a maintenance fund from the inmates, securing this from veterans of the war. Yet we have nearly half our inmates, many of them young men, receiving large pensions for short service on certificates of disability, and they claim the right to free life in this Home, and plenty of spending money besides. From this latter class come all the disorder and insubordination—the incendiarism of the Home. The twenty-year men need no restraining discipline, excepting when a weak demagogue shows up among them. The young men of short service as soon as admitted to the Home apply for pensions. As soon as a pension is granted they apply for an increase, and with the facilities for beating the Government offered by the numerous pension-claim agents near at hand, young men not thirty years old and who have served only a few years in the Army, are living in this Home, where every necessity of life is furnished free, receiving a pension of \$24 and \$30 per month, who to all intents have little or nothing ailing them. That such a person, with no employment, should become a loafer, and even a criminal, is not at all unlikely.

During the past year, and especially in the winter months, the Home was crowded to the extent of being untidy and unhealthy. Rooms with only air space for 6 men had 8 crowded into them. Anticipating the same crowded condition of the Home the coming winter, the Board of Commissioners directed the discharge of pensioners receiving \$24 and upward. Forty-four inmates came in this class, 18 of them receiving \$30 per month. Fifteen of the 44 were found in need of medical treatment, or they were old and infirm, and discharges were made of only 29. These men, the

more successful of the pensioners, were extremely indignant at the sudden closing of their happy paradise and indulged in threats of revenge.

The National Homes have limited their members to pensioners receiving not to exceed \$16 per month. The same rule would be most wholesome here, and would tend to check the business of obtaining fraudulent pensions, which goes on unceasingly in this institution. The number of applications for admission to the Home during the year has been 215; of these 51 have been rejected. Many of those rejected applicants have no pensions, and their wants are much more pressing than those of the seventeen-dollar pensioners now members of the Home. The number of applicants for outdoor relief is 136; the number rejected is 51. This class of claimants upon the Home are discharged soldiers of real merit, who live in their own homes, and are deserving of help.

It is to be hoped that the improvement in the finances of the Home will justify more favorable consideration for those deserving discharged soldiers. The number of inmates who have served twenty years and upward is 328. The number who served in the Mexican war is 35. The number who served in the late war of the rebellion is 315. This shows that this Home should have prompt legislation upon the absurdity of a double compensation, viz, a life in the Home and additionally a pension to a class who have done little or nothing to entitle them to such extraordinary privileges.

A new and handsome fence is required on the south boundary of the Home, but only 1,500 feet are necessary during the coming year. A good amusement hall for concerts, meetings, and plays, is very much needed, and I recommend an appropriation for that purpose at an early date.

Respectfully submitted.

D. S. STANLEY,
Brigadier-General, Brevet Major-General, Governor.

The BOARD OF COMMISSIONERS UNITED STATES SOLDIERS' HOME.

REPORT OF THE ATTENDING SURGEON OF THE SOLDIERS' HOME.

UNITED STATES SOLDIERS' HOME,
OFFICE OF ATTENDING SURGEON,
Washington, D. C., September 30, 1894.

SIR: I have the honor to submit the following report of the medical department of the Home for the past year, ending September 30, 1894:

	1894.	1893.	1892.	1891.
Patients remaining in hospital from last report.....	85	86	88	75
Patients admitted to hospital during the year	310	316	391	379
Total treated in the hospital.....	395	402	479	454
Returned to the Home recovered, mostly acute cases.....	146	156	198	194
Returned to the Home improved, mostly chronic cases.....	84	102	127	120
Returned to the Home unimproved, incurable.....	43	16	18	6
Sent to the United States Hospital for the Insane.....	3	5	5	5
Deserted from the hospital.....				3
Died in hospital	35	35	38	37
Dead when brought to hospital.....	6	3	7	1
Remaining in hospital at present date.....	78	85	86	88
Total	395	402	479	454

Ages of patients admitted.

	1894.	1893.	1892.	1891.
From 20 to 29 years	35	32	30	37
From 30 to 39 years	31	44	60	53
From 40 to 49 years	63	77	83	84
From 50 to 59 years	81	68	92	110
From 60 to 69 years	66	60	83	69
From 70 to 79 years	32	33	40	21
From 80 to 89 years	2	2	3	4
From 90 to 99 years				1
Age of the youngest.....years..	22	22	23	19
Age of the oldest	81	88	84	93
Average age of patients admitted	51. 75	50. 22	51. 36	50. 40
Greatest number of patients at one time.....	86	88	88	90
Least number of patients at one time	64	72	65	56
Daily average of patients in hospital.....	76. 45	81. 42	78. 10	73. 04

Diseases for which patients were admitted to hospital.

Diseases.	Pa- tients.	Diseases.	Pa- tients.
Abcess:		Hypermetropia	1
Alveolar	1	Hypochondriasis	2
Gluteal	1	Indigestion	11
Ocular	1	Influenza	4
Adenitis	3	Insanity	3
Alcoholism	39	Intermittent fever	3
Amputations:		Iritis	3
Arm (reamputation)	1	Lead poisoning, chronic	1
Both legs, old	1	Liver, cirrhosis of	1
Finger	1	Locomotor ataxia	2
Toe	1	Lumbago	5
Aneurism of abdominal aorta	2	Malarial fever, continued	1
Angina pectoris	1	Melancholia	1
Asthma	7	Memory, loss of	1
Balanitis	1	Meniere's disease	1
Bilious remittent fever	2	Morphinism	2
Bowels, inflammation of	1	Muscular atrophy, progressive	1
Brain clot	1	Myelitis, chronic	1
Bronchial catarrh:		Nasal polypi	1
Acute	3	Necrosis of bones of feet	1
Chronic	1	Nephritis, chronic	7
Bronchitis, chronic	8	Neuritis, chronic	1
Bulbar paralysis, chronic	1	Nicotine poisoning	1
Cancrum oris	1	Obesity	2
Carcinoma:		Ocular muscles, paralysis of	1
Ear	1	Ophthalmia, chronic	2
Face	1	Opium habit	1
Liver	2	Opium poisoning	2
Caries of upper jaw	1	Orchitis	2
Cerebral softening	2	Osteitis deformans	1
Cholera morbus	4	Palmar fascia, contraction of (Dupuy- tren's)	1
Colic, acute	1	Paralysis	3
Conjunctivitis	1	Paresis, general	1
Constipation:		Pharyngitis	1
Acute	2	Pharyngo-laryngitis, aphthous	1
Chronic	1	Poor physique	1
Contusion of side	1	Pleurodynia	1
Cystitis, chronic	2	Pneumonia:	
Delirium tremens	4	Chronic	9
Dementia	1	Typhoid	1
Diabetes mellitus	4	Prostatitis	1
Diarrhea, acute	2	Pulmonary hemorrhage	1
Dislocation of humerus	3	Rectum, stricture of	1
Drowning	2	Renal catarrh	1
Dysentery, chronic	2	Rheumatism:	
Ecthyma	1	Acute	1
Eczema	1	Chronic	26
Empyema	3	Subacute	3
Endocarditis, chronic ulcerative, result- ing in pyemia after operation for stran- gulated hernia	1	Syphilitic	1
Epilepsy	4	Rhus toxicodendron poisoning	2
Epileptic insanity	1	Sebaceous cyst	2
Epithelioma:		Senile debility	17
Hand	1	Shin, old injury to	1
Scalp	1	Spinal cord, concussion of	1
Erysipelas, facial	4	Sprains:	
Esophagus, stricture of	2	Ankle	7
Eye, injury to	1	Deltoid muscle	1
Fistula in ano	1	Knee	1
Fractures:		Knee, old	1
Clavicle	1	Staphyloma	1
Fibula (Pott's) old	1	Syphilis:	
Frontal bone, old	1	Primary stage	2
Rib	1	Secondary stage	1
Wrist	1	Tertiary stage	1
Wrist, old	1	Tonsillitis	1
Furuncle	2	Tonsillitis, follicular	1
Gastritis, chronic	3	Tuberculosis:	
Gonorrhea	5	General	1
Hanging, suicide by	1	Pulmonary	27
Heart disease	25	Ulcers of leg:	
Hemiplegia	4	Chronic	2
Hemorrhoids	6	Specific	1
Hernia	2	Varicose	1
Herpes zoster	2	Urethra, stricture of	2
Hip joint:		Wounds:	
Chronic inflammation of	1	Finger, incised	1
Synovitis	1	Head, lacerated and contused	3
Hydrocele	1	Lip, lacerated	1
		Scalp and hands, lacerated	1

This list exhibits only the diseases complained of by the patients at the time of admission to the hospital, and does not include the numerous complications, operations, nor secondary affections arising during the course of treatment. The principal troubles are chronic rheumatism, heart disease, consumption, hernia, catarrh, epilepsy, dyspepsia, and constipation. Many of the men are affected with two or more of these diseases at the same time, and yet may be admitted to hospital for some minor complaint not connected with either.

The 2,791 cases treated at sick call are not included in the above list of diseases.

Necrology.

Name.	Age.	Nativity.	Last served in company and regiment.	Died.	Cause of death.
1893.					
McCaffery, James	66	Ireland	D, 10th Inf. . .	Oct. 1	Abscess of liver.
Carey, Patrick	65	.....do	A, 1st Cav . . .	Oct. 3	Alcoholism.
Kline, John	80	Germany	Art. detach . . .	Oct. 5	Heart disease.
Davis, Evan	70	Ireland	E, 13th Inf.	Oct. 8	Inflammation of brain.
Drost, Abraham P	52	United States.	C, 3d Art	Oct. 14	Softening of brain.
Randall, Edward	27	.....do	H, 25th Inf.	Nov. 11	Consumption.
Jones, George ¹	71	England	C, 16th Inf.	Nov. 12	Heart disease.
Talbot, Thomas	64	.....do	H, 5th Cav.	Dec. 3	Cirrhosis of liver.
Devine, James	54	Ireland	G, 6th Cav.	Dec. 9	Brain clot.
Bowder, Jacob	77	Switzerland...	B, 7th Inf.	Dec. 12	Heart disease.
1894.					
Baker, Allen C.	54	United States.	I, 1st Art.	Jan. 1	Chronic pneumonia.
Fabry, Julius	67	Germany	K, 4th Art.	Jan. 10	Opium poisoning.
Brockmeyer, Fred'k ¹ ..	65	Denmark	F, 2d Art.	Jan. 18	Suicide by hanging.
Fitzgerald, Pat'k H ...	43	Ireland	A, 17th Inf.	Jan. 25	Heart disease.
Hartman, William ¹	72	Germany	H, 6th Inf.	Feb. 17	Do.
Martin, Henry	41	France	B, 2d Cav.	Feb. 22	Consumption.
Fitzpatrick, James	51	Ireland	Retired	Mar. 6	Do.
O'Brien, Dennis	57	.....do	K, 9th Inf.	Mar. 8	Opium poisoning.
Gouldman, Lewellyn P. .	29	United States.	E, 4th Cav.	Mar. 9	Consumption.
Feininger, Louis ¹	66	Germany	H, 6th Inf.	Mar. 18	Drowned in lake.
Basquill, Patrick	55	Ireland	G, 18th Inf. ...	Mar. 19	Consumption.
Brown, Charles H.	73	Germany	C, 18th Inf.	Apr. 4	Diabetes mellitus.
Ballance, Joseph	44	United States.	F, 17th Inf.	Apr. 5	Inflammation of brain.
Anderson, Henry ¹	55	Ireland	D, 7th Cav.	Apr. 23	Opium poisoning.
Wilson, William	50	Finland	M, 2d Art.	Apr. 29	Cancer of liver.
Davenport, Nathaniel .	63	England	D, 3d Art.	May 20	Inflammation of bowels.
Wallace, Samuel	90	United States.	F, 11th Inf.	June 3	Do.
Martin, John C.	56	.....do	E, 14th Inf.	June 19	Shot himself.
Rowse, George ¹	62	England	G, 4th Inf.	June 25	Drowned in lake.
Schweigert, Joseph	70	Germany	B, 5th Inf.	June 27	Heart disease.
Cherry, Luke	89	England	H, 7th Inf.	July 9	Old age and tuberculosis.
Svenson, William	48	Sweden	K, 3d Inf.	July 10	Consumption.
Francisco, William	47	United States.	Hosp. Corps ..	July 23	Do.
Corn, Paul F.	37	Germany	C, 3d Art.	Aug. 5	Pyæmia from endocardiac ulcer.
Wyatt, William C.	66	United States.	I, 1st Va. Vols.	Aug. 8	Bright's disease.
Rosenberg, John	77	Germany	C, 14th Inf.	Aug. 9	Old age and cancer of stomach.
Brown, George W.	63	United States.	E, 10th Cav. ...	Aug. 20	Chronic pneumonia.
Foreman, Alexander...	29	Sweden	A, 10th Inf.	Sept. 3	Consumption.
Johnson, James	68	Ireland	M, 4th Cav.	Sept. 15	Diabetes mellitus.
Mason, James	69	United States.	General service.	Sept. 16	Old age and Bright's disease.
Jones, James	24	.....do	C, 25th Inf.	Sept. 24	Consumption.

¹ Dead when brought to hospital.

The daily average of inmates present at the Home was: For 1890, 698; for 1891, 718; for 1892, 745; for 1893, 751; for 1894, 734.

Proportion of deaths to 100 inmates per annum.

Year.	Per cent.	Year.	Per cent.	Year.	Per cent.
1894	4.77	1892	5.10	1890	5.30
1893	4.66	1891	5.15	1889	6.06

Prescriptions compounded during the year.....	7,499
Applications for treatment at sick call	2,791
Out patients connected with the Home treated.....	310

Annual statement of expenses from treasurer's records.

	1894.	1893.	1892.	1891.
Average number of men, including attendants.....	108	112. 42	107. 60	102. 54
Subsistence.....	\$8, 387. 95	\$9, 187. 47	\$8, 763. 33	\$9, 711. 03
Subsistence, inmates Government Insane Asylum.....	3, 740. 62	2, 985. 00	4, 878. 58	3, 676. 43
Cost of medicines.....	940. 27	1, 303. 94	1, 187. 19	824. 16
Attendants.....	6, 369. 36	6, 330. 62	6, 648. 46	6, 182. 87
Ice.....	524. 41	350. 10	416. 78	378. 19
Fuel.....	1, 646. 28	1, 384. 89	1, 466. 07	1, 126. 43
Gas.....	1, 012. 00	923. 13	728. 00	1, 039. 50
Laundry.....	283. 52	252. 81	261. 69	377. 14
Stationery.....	94. 89	112. 11	70. 69	76. 13
Spectacles.....	82. 00	29. 51	31. 99	89. 19
Trusses.....	7. 00	4. 75	4. 00	.....
Coffins.....	378. 51	334. 96	334. 77	229. 75
Bedding.....	622. 50	263. 15	421. 00	.....
Repairs.....	571. 92	1, 915. 54	3, 685. 94	525. 75
Forage for ambulance horses.....	273. 05	201. 24	262. 08	196. 19
Instruments and appliances.....	63. 73	133. 81	71. 10	208. 40
Books.....	139. 94	43. 12	18. 12	49. 30
Furniture.....	103. 60	414. 42	527. 73	394. 43
Miscellaneous.....	36. 75	39. 71	60. 32	47. 85
Total.....	25, 278. 30	26, 210. 28	29, 837. 84	25, 132. 70
Cost per man per day.....cents..	66. 10	63. 87	75. 97	67. 15

Monthly statement of expenses of hospital, from October 1, 1893, to September 30, 1894, furnished by the treasurer.

Items.	Amount.	Items.	Amount.
<i>October, 1893.</i>		<i>November, 1893—Continued.</i>	
Subsistence.....	\$786. 75	Claret and port.....	\$3. 90
Gas.....	86. 75	Spectacles.....	9. 00
Ice.....	46. 00	Trusses.....	7. 00
Pay, clinical assistants.....	100. 00	Lumber, etc., for coffins.....	87. 98
Pay, ambulance driver.....	20. 00	Instruments.....	7. 75
Extra washing.....	23. 18	Pay roll, extra duty.....	408. 99
Forage and hay.....	16. 77	Total.....	1, 967. 71
Horseshoeing.....	3. 00	<i>December, 1893.</i>	
Coal.....	931. 11	Subsistence.....	771. 64
Sheets, pillows, and slippers.....	143. 50	Gas.....	133. 75
52 blankets.....	169. 00	Ice.....	25. 92
Blacking, lye, matches, etc.....	11. 06	Pay, clinical assistant.....	100. 00
Tableware and linen.....	34. 03	Pay, ambulance driver.....	20. 00
52 gallons kerosene oil.....	6. 24	Extra washing.....	25. 28
Knobs, hinges, screws, and brackets.....	1. 20	Forage and hay.....	16. 77
Grate bars for furnace.....	10. 96	Horseshoeing.....	3. 00
Freight, atomizer bulbs.....	4. 58	Stencils and envelope opener.....	1. 10
Stationery and printing.....	12. 47	Brushes, hinges, argand chimneys.....	3. 35
Medical and hospital supplies.....	259. 59	Stationery and printing.....	6. 20
Medical books.....	13. 00	Articles for police purposes.....	8. 98
Spectacles.....	4. 50	Brass screws and washers.....	. 75
Lumber for coffins.....	36. 00	Medical and hospital supplies.....	45. 25
Pay roll, extra duty.....	398. 79	Spectacles.....	3. 00
Total.....	3, 118. 48	Government Asylum for Insane.....	990. 71
<i>November, 1893.</i>		Pay roll, extra duty.....	407. 19
Subsistence.....	861. 10	Total.....	2, 562. 87
Gas.....	97. 75	<i>January, 1894.</i>	
Ice.....	29. 36	Subsistence.....	806. 45
Pay, clinical assistant.....	100. 00	Gas.....	160. 25
Pay, ambulance driver.....	20. 00	Ice.....	22. 80
Extra washing.....	27. 28	Pay, clinical assistant.....	100. 00
Forage and hay.....	16. 77	Pay, ambulance driver.....	20. 00
Horseshoeing.....	3. 00	Extra washing.....	21. 54
50 blankets.....	162. 50	Forage, hay, horseshoeing.....	25. 35
Lumber for repairs.....	2. 40	Grate for stove.....	4. 50
Plumbing materials.....	1. 74	Tin and galvanized iron.....	6. 10
Weather strips, hinges, etc.....	25. 13	Plumbing materials.....	18. 92
Stamp, stencils, boilers, etc.....	20. 35	Articles for police.....	9. 46
Articles for police, etc.....	9. 21		
Printing and stationery.....	2. 50		
Repairs to elevator.....	64. 00		

Monthly statement of expenses of hospital, from October 1, 1893, etc.—Continued.

Items.	Amount.	Items.	Amount.
<i>January, 1894—Continued.</i>		<i>May, 1894.</i>	
Medical books.....	\$60.30	Subsistence.....	\$668.20
Printing and stationery.....	13.60	Gas.....	52.25
Crockery and utensils.....	44.22	Ice.....	57.08
Instruments.....	10.61	Pay, clinical assistant.....	100.00
Spectacles.....	12.00	Pay, ambulance driver.....	20.00
Coffin materials.....	8.40	Extra washing.....	20.57
Pay roll, extra duty.....	407.33	Forage and hay.....	22.35
		Horseshoeing.....	3.00
Total.....	1,751.83	500 feet weather strips.....	17.50
<i>February, 1894.</i>		Articles for police.....	8.63
Subsistence.....	712.02	2 G. I. hot water boilers.....	56.27
Gas.....	143.50	52 gallons kerosene oil.....	4.68
Ice.....	21.40	Fire brick, grate, freight.....	5.00
Pay, clinical assistant.....	100.00	Medical and hospital supplies.....	475.47
Pay, ambulance driver.....	20.00	Printing and stationery.....	14.25
Extra washing.....	20.64	Spectacles.....	7.50
Horseshoeing, forage, and hay.....	25.35	Medical books.....	4.50
Furnace coal.....	631.23	Pay roll, extra duty.....	409.00
Articles for police purposes.....	6.18		
Paints and oils.....	6.90	Total.....	1,946.25
Materials for making boilers.....	3.15		
Plumbing materials.....	5.25	<i>June, 1894.</i>	
Medical and hospital supplies.....	44.53	Subsistence.....	663.04
Lumber and materials for coffins.....	70.06	Gas.....	59.50
Medical books.....	8.40	Ice.....	57.64
Pay roll, extra duty.....	409.00	Pay, clinical assistant.....	100.00
		Pay, ambulance driver.....	20.00
Total.....	2,227.61	Extra washing.....	21.77
<i>March, 1894.</i>		Forage and hay.....	22.35
Subsistence.....	764.38	Horseshoeing.....	3.00
Gas.....	103.50	Articles for police purposes.....	8.75
Ice.....	38.20	105 feet hose.....	11.10
Pay, clinical assistant.....	100.00	Wire cloth and hinges.....	.96
Pay, ambulance driver.....	20.00	Material for boilers.....	3.50
Extra washing.....	24.66	1 bracket, freight.....	.85
Forage and hay.....	22.35	Stationery and printing.....	2.70
Horseshoeing.....	3.00	Spectacles.....	14.50
Argand shade and burner.....	.65	Lumber for coffins.....	36.60
Bricks, 2 panes glass.....	2.45	Medical and hospital supplies.....	6.40
Lumber for repairs.....	9.30	Government Asylum for Insane.....	910.00
Material for soup kettle.....	1.40	Pay roll, extra duty.....	415.40
Articles for police purposes.....	8.62		
Walnut office table.....	7.00	Total.....	2,338.15
Stationery and printing.....	14.92		
Medical and hospital supplies.....	2.40	<i>July, 1894.</i>	
Instruments.....	27.34	Subsistence.....	619.44
Medical books.....	31.75	Gas.....	30.50
Spectacles.....	12.00	Ice.....	71.29
Trimmings for coffins.....	17.04	Pay, clinical assistant.....	100.00
Pay roll, extra duty.....	409.00	Pay, ambulance driver.....	20.00
		Extra washing.....	25.44
Total.....	1,619.96	Forage and hay.....	22.35
<i>April, 1894.</i>		Horseshoeing.....	3.00
Subsistence.....	665.87	Towels and bed spreads.....	147.50
Gas.....	78.00	Coal.....	63.53
Ice.....	32.56	Repairs to furnace.....	10.80
Pay, clinical assistant.....	100.00	Repairs to boilers.....	13.06
Pay, ambulance driver.....	20.00	Articles for police.....	8.19
Extra washing.....	24.49	Articles of tableware.....	35.12
Forage and hay.....	22.35	Repairs to ambulance.....	6.91
Horseshoeing.....	3.00	Repairs, invalid chairs.....	3.21
Plumbing materials.....	2.70	Medical and hospital supplies.....	32.35
Dishes, brooms, mops, hinges, etc.....	20.00	Medical books.....	14.00
Articles for police purposes.....	4.43	Spectacles.....	6.00
Lumber for shelving and trays.....	9.00	Stationery and printing.....	11.75
Medical books.....	1.50	Trimmings for coffins.....	13.68
Trimmings for coffins.....	32.17	Pay roll, extra duty.....	418.40
Medical and hospital supplies.....	17.87		
Spectacles.....	7.50	Total.....	1,676.53
Stationery and printing.....	6.15		
Government Asylum for Insane.....	915.63	<i>August, 1894.</i>	
Pay roll, extra duty.....	409.00	Subsistence.....	540.53
		Gas.....	37.50
Total.....	2,372.22	Ice.....	67.64
		Pay, clinical assistant.....	100.00
		Pay, ambulance driver.....	20.00
		Extra washing.....	28.13
		Forage and hay.....	22.35

Monthly statement of expenses of hospital, from October 1, 1893, etc.—Continued.

Items.	Amount.	Items.	Amount.
<i>August, 1894—Continued.</i>		<i>September, 1894—Continued.</i>	
Horseshoeing.....	\$3.00	Ice	\$54.52
Articles for police purposes.....	10.01	Pay, clinical assistant	100.00
Repairs to sink	1.65	Pay, ambulance driver.....	20.00
Castors and desk lock	2.65	Extra washing	20.56
Mechanical tools.....	9.45	Forage and hay	43.94
Sink for dining room	9.75	Horseshoeing	1.50
Coal	20.41	Recovering mattresses, etc	25.48
Renovating hair mattresses	9.30	Molding, oil, ind. ink	11.41
Instruments.....	10.50	Repairs, ambulance and chairs	19.56
Medical and hospital supplies	21.18	Materials, soup boiler.....	1.40
Lumber and trimmings for coffins	68.18	Articles for police.....	8.41
Medical books	5.00	Table, wire cloth.....	1.74
Spectacles	6.00	Medical books	1.49
Pay roll, extra duty	419.00	Medical and hospital supplies	32.13
Total	1,412.23	Instruments.....	4.85
<i>September, 1894.</i>		Printing and stationery	9.25
Subsistence	528.53	Material for coffins	8.40
Gas.....	48.75	Government Asylum for Insane.....	924.28
		Pay roll, extra duty.....	418.26
		Total	2,284.46

The sanitary condition of the Home and grounds has been excellent throughout the year. There has been no prevalent or epidemic disease among the inmates. The water supply and drainage are satisfactory. The few vegetables furnished to the hospital from the farm have been of very inferior quality. The milk is obtained from a point so far from the Home that it deteriorates very much in transit, especially in warm weather. As stated in my last annual report, the milk received at the hospital is practically useless in the preparation of extra diet for the sick.

Dr. George H. Penrose, clinical assistant at this hospital since October 21, 1889, resigned July 1, 1894, to go into private practice, and Dr. J. Ben Nichols was appointed in his place.

Very respectfully, your obedient servant,

W. H. FORWOOD,
Surgeon, United States Army, in Charge.

The GOVERNOR OF THE HOME.

WAR 94—VOL I—34

Bedding for inmates, bedsteads, blankets, etc., upholstering materials.....	287.00	227.60	204.10	.....	22.20	303.94	204.17	24.60	.....	145.18	.....	1,804.05
.....	1,465.81	1,845.75	1,220.74	1,322.64	1,941.09	1,321.26	2,068.59	1,476.47	1,923.93	1,654.18	1,417.19	18,273.88
.....	90.81	137.77	5.39	177.14	98.67	77.26	300.98	61.05	137.14	228.52	119.25	1,518.43
.....	189.19	302.39	339.94	155.43	85.01	77.25	479.37	123.19	197.60	224.37	161.86	2,426.21
.....	137.23	139.33	143.74	149.39	127.06	143.85	147.09	160.59	124.46	138.19	124.09	1,654.91
.....	54.09	108.24	321.97	139.33	97.84	25.66	211.46	78.20	15.30	63.75	17.15	1,234.95
.....	45.25	57.65	116.90	54.10	.....	158.00	.....	.....	68.01	43.80	.....	622.21
.....	190.00	190.00	190.00	190.00	190.00	190.00	190.00	190.00	190.00	190.00	190.00	2,260.00
.....	319.15	330.74	346.76	346.39	251.54	359.46	331.58	339.17	328.77	171.50	172.77	3,559.37
.....	1,000.90	1,002.14	1,055.56	1,045.31	1,005.23	1,002.73	1,009.16	1,728.03	1,690.17	1,711.61	1,695.21	20,290.57
.....	456.00	326.90	5,771.27	402.60	326.00	5,578.00	402.00	846.00	5,944.33	331.00	276.00	25,404.53
.....	238.75	238.25	361.75	419.75	354.25	287.09	251.90	202.50	184.00	119.75	146.25	2,985.76
.....	.....	.....	900.71	.....	.....	.....	915.63	.....	916.09	.....	.....	3,749.62
.....	.....	.....	.....	.....	.....	25.00	25.00	.....	.....	.....	25.00	180.00
.....	147.49	2,127.00	.....	1,115.68	98.00	.....	204.20	320.26	156.00	.....	.....	4,170.54
.....	516.00	4,499.67	75.00	3,448.00	.....	.....	.....	.....	.....	.....	.....	8,538.67
Total	24,047.95	20,735.47	18,012.26	15,258.99	13,690.03	18,264.95	17,715.87	11,638.64	17,398.79	10,112.39	9,051.12	189,941.67

Annual report of receipts and expenditures, etc.—Continued.

RECAPITULATION.

RECEIPTS.

Balance on hand September 30, 1893.....	\$15,507.15
From the United States Treasurer upon resolutions of the Board of Commissioners, approved by the Secretary of War.....	103,000.00
From interest on permanent fund.....	74,697.09
From effects of deceased soldiers subject to the demand of legal heirs.....	664.95
From miscellaneous sources.....	6,512.63
Total	200,381.82

EXPENDITURES.

Furniture for officers' quarters and expenses thereof.....	443.50
Compensation of the governor, deputy governor, treasurer, and clerk to Board of Commissioners.....	4,184.88
Transportation furnished to discharged soldiers en route to the Home and refunded to Quartermaster's Department.....	635.63
Fuel for the Home.....	7,410.80
Expenses of the hospital for medicines, medical stores, spectacles, false teeth, material for coffins, etc.....	1,606.76
Expenses of the hospital for mess and kitchen purposes, and all running expenses, including compensation to inmates on duty and pay of civilian employees.....	17,912.42
Refunded to claimants as heirs of deceased soldiers.....	1,441.49
Refunded to claimants as heirs of deceased inmates.....	343.73
Clothing for inmates.....	14,004.42
Subsistence stores and ice, including special diet and stimulants for the sick.....	42,120.40
Articles for the Home bakery, repairs, etc., except flour, salt, hops, and potatoes.....	242.95
Bedding for inmates, bedsteads, blankets, upholsterers' materials.....	1,804.05
Farm, garden, and dairy utensils, seeds, guano, manure, etc., cultivation of garden, ornamentation of grounds, pay of farm, garden, dairy, and other employees.....	18,273.88
Mess and kitchen utensils, and other articles except bedding for the Home.....	1,518.42
Material for general repairs to buildings, repair of roads and fences, purchase and repairs of harness, vehicles, purchase of mechanical tools.....	2,436.21
Forage and medicines for Home animals, articles used in stables.....	1,656.91
Expenses of the library, governor's, and treasurer's offices, postage, post-office box rent, stationery, etc., for Commissioners' office, freight, telegrams, and amusements.....	1,234.95
Incidental expenses, removal of night soil, rent of telephone, hack hire, advertising, traveling expenses, professional services, and expenses Home chapel.....	629.21
Religious services.....	2,280.00
Laundry work for the Home.....	3,559.27
Compensation to inmates and monthly allowance nonpensioners of the Home.....	20,260.57
Commutation to inmates of the Home residing outside.....	26,404.53
Gas for the Home, including rental of Amicks' gas regulators.....	2,988.75
Board and medical treatment of members of the Home in Government Hospital for Insane..	3,740.62
Funeral expenses of members of the Home residing outside.....	100.00
New buildings, new boiler, steam pumps, masonry work, and tank for new water supply...	8,538.67
Permanent improvements, new fences, wells, repair of bridges, lamp posts, gas lamps, paving, sewerage, remodeling water-closet Anderson Building, plumbing, concreting, and carpenter's work main privy, pointing up stonework Scott Building, etc.....	4,170.54
Balance on hand September 30, 1894.....	10,440.15
Total	200,381.82

Comparative statement of money received and disbursed on account of the United States Soldiers' Home, District of Columbia, for two years—October 1, 1892, to September 30, 1894.

Received October 1, 1892, to September 30, 1893.....	\$237,774.55
Expended October 1, 1892, to September 30, 1893.....	222,267.40
Balance on hand September 30, 1893.....	15,507.15
Received October 1, 1893, to September 30, 1894.....	200,381.82
Expended October 1, 1893, to September 30, 1894.....	189,941.67
Balance on hand September 30, 1894.....	10,440.15
Expenditures during the year ending September 30, 1893, for new buildings and permanent improvements.....	25,688.04
Running expenses for the year.....	196,579.36
Expenditures during the year ending September 30, 1894, for new buildings and permanent improvements.....	12,709.21
Running expenses for the year.....	177,232.46
Average cost per man, per year.....	196.95
Average cost per man, per month.....	16.41½
Average number of inmates for the year ending September 30, 1894.....	7.34
Average cost of rations per man, per month, including vegetables and fruit raised on Home grounds.....	\$5.70
Average cost of ration per day.....	18½

Statement of the Soldiers' Home permanent fund account from October 1, 1893, to September 30, 1894.

CR.

1893.			
Oct. 1.	Balance		\$2, 479, 343. 32
28.	Amount of deposits	\$14, 922. 93	
Nov. 27.	Amount of deposits	1, 407. 31	
1894.			
Jan. 27.	Amount of deposits	16, 307. 44	
Feb. 24.	Amount of deposits	26, 474. 79	
Mar. 28.	Amount of deposits	7, 192. 01	
Apr. 26.	Amount of deposits	23, 536. 25	
May 26.	Amount of deposits	39, 743. 83	
June 28.	Amount of deposits	21, 982. 06	
July 28.	Amount of deposits	11, 906. 45	
Aug. 29.	Amount of deposits	11, 060. 77	
Sept. 26.	Amount of deposits	23, 159. 63	
			197, 093. 47
	Total		2, 677, 036. 79

DR.

1893.			
Oct. 19.	Less amount paid from permit fund	8, 000. 00	
Nov. 27.	Less amount paid from permit fund	9, 000. 00	
Dec. 20.	Less amount paid from permit fund	18, 000. 00	
1894.			
Feb. 23.	Less amount paid from permit fund	5, 000. 00	
Mar. 17.	Less amount paid from permit fund	18, 000. 00	
May 18.	Less amount paid from permit fund	10, 000. 00	
June 26.	Less amount paid from permit fund	20, 000. 00	
Sept. 21.	Less amount paid from permit fund	15, 000. 00	
			103, 000. 00
30,	Balance		2, 574, 036. 79
	Total		2, 677, 036. 79

Statement of the Soldiers' Home interest account, from October 1, 1893, to September 30, 1894.

DR.

Balance October 1, 1893		\$18, 823. 29
Interest on balance: \$2,479,343.32 from October 1 to December 31, 1893	\$18, 743. 83	
Interest on deposit:		
October 28 to December 31, 1893	78. 49	
November 27 to December 31, 1893	4. 05	
		18, 826. 37
Interest on balance, \$2,460,673.56, from January 1 to March 31, 1894	18, 196. 68	
Interest on deposit:		
January 27 to March 31, 1894	85. 77	
February 24 to March 31, 1894	78. 37	
March 28 to March 31, 1894	2. 37	
		18, 363. 19
Interest on balance, \$2,487,647.80, April 1 to June 30, 1894	18, 607. 61	
Interest on deposit:		
April 26 to June 30, 1894	127. 68	
May 26 to June 30, 1894	117. 64	
June 28 to June 30, 1894	5. 38	
		18, 858. 31
Interest on balance: \$2,542,909.94, July 1 to September 30, 1894	19, 224. 39	
Interest on deposit:		
July 28 to September 30, 1894	63. 58	
August 29 to September 30, 1894	29. 97	
September 26 to September 30, 1894	9. 99	
		19, 327. 93
Total		94, 199. 09
Less interest on principal paid:		
Fourth quarter of 1893	92. 30	
First quarter of 1894	37. 39	
Second quarter of 1894	44. 88	
Third quarter of 1894	12. 32	
		186. 39
Less interest paid:		
Fourth quarter of 1893	18, 823. 29	
First quarter of 1894	18, 734. 07	
Second quarter of 1894	18, 325. 80	
Third quarter of 1894	18, 813. 93	
		74, 697. 03
Balance		19, 315. 61
Total		94, 199. 09

Treasurer of the United States Soldiers' Home in account with the inmate pensioners, for moneys received under section 4, act approved March 3, 1883, and deposited with the Treasurer of the United States.

1893.		MONEYS RECEIVED.	
Oct.	1. Balance on hand.....		\$49,815.34
	31. S. L. Willson's checks		922.97
Nov.	30. S. L. Willson's checks		925.67
Dec.	31. S. L. Willson's checks		21,128.65
1894.			
Jan.	31. S. L. Willson's checks		804.73
Feb.	28. S. L. Willson's checks		512.54
Mar.	31. S. L. Willson's checks		22,648.34
Apr.	30. S. L. Willson's checks		1,435.32
May	31. S. L. Willson's checks		1,464.09
June	30. S. L. Willson's checks		22,341.90
July	31. S. L. Willson's checks		1,199.74
Aug.	31. S. L. Willson's checks		1,029.46
Sept.	30. S. L. Willson's checks		20,820.68
Total			145,049.43

1893.		MONEYS DISBURSED	
Oct.	14. Pension pay roll for October, 1893.....		\$3,450.45
	18. Richard Vander Bruck, pensioner		1.00
Nov.	18. Estate of Geo. Walter, deceased.....		90.00
	29. Estate of Jos. B. Hayes, deceased.....		742.40
	30. Pension pay roll for November, 1893.....		2,758.87
Dec.	30. Pension pay roll for December, 1893		16,724.89
1894.			
Jan.	31. Pension pay roll for January, 1894.....		1,924.78
Feb.	28. Pension pay roll for February, 1894.....		1,009.67
Mar.	12. John H. Albertzart, pensioner		72.00
	28. Samuel H. Craig, pensioner.....		20.00
	31. Pension pay roll for March, 1894		19,728.65
Apr.	10. George L. Topping, pensioner		22.00
	30. Estate of Allen C. Baker, deceased.....		1.00
	30. Pension pay roll for April, 1894.....		2,147.26
	30. Estate of A. P. Drost, deceased.....		72.00
May	21. Frederick Lindner, pensioner		10.00
	31. Estate of H. H. Lecronier, deceased.....		294.00
	31. Pension pay roll for May, 1894.....		1,637.27
June	30. Pension pay roll for June, 1894		17,990.29
July	18. Augustus Smith, pensioner.....		80.00
	31. Pension pay roll for July, 1894.....		1,165.10
Aug.	8. Lewis S. Grigsby, pensioner		50.00
	31. Pension pay roll for August, 1894.....		1,288.06
Sept.	8. Estate of Fred'k Brockmeyer, deceased.....		28.00
	12. Wm. Campbell, pensioner		127.00
	22. James Ryan, pensioner		10.00
	29. On account of Harry C. Greer, pensioner.....		772.00
	29. James Ryan, pensioner.....		25.00
	29. Pension pay roll for September, 1894.....		21,523.45
	29. Pension moneys of deceased pensioners, transferred to the Home fund		4,672.93
	30. Balance in United States Treasury		46,613.36
Total			145,049.43

Annual report of the number of pensioners in the United States Soldiers' Home, rates of pensions, etc., September 30, 1894.

Pensioners drawing—		Pensioners drawing—Continued.	
\$2	17	\$17	78
4	52	18	3
6	60	20	7
8	160	22	2
10	57	24	20
12	268	25	2
12.50	1	30	8
14	37	72	1
15	3		
16	89	Total.....	815

Annual report of the number of pensioners in the United States Soldiers' Home, rates of pensions, etc., September 30, 1894—Continued.

Pensioners present in the Home:	
Pensioners whose money is drawn by the treasurer.....	560
Pensioners who have assigned their certificates.....	22
	<hr/> 582
Pensioners absent:	
On outdoor relief.....	230
On suspension.....	8
	<hr/> 233
Total number of pensioners, September 30, 1894.....	815
Total number of pensioners, September 30, 1893.....	834
	<hr/> <hr/>
Alterations since last report (September 30, 1893):	
New certificates received for inmates.....	75
Admitted and readmitted.....	211
	<hr/> 286
Loss by discharge.....	266
Loss by death.....	39
	<hr/> 305
Net loss during the year.....	19
	<hr/> <hr/>
Description of certificates:	
Army invalid.....	506
Army, act of June 27, 1890.....	150
Mexican war.....	155
Navy, original.....	2
Navy, act of June 27, 1890.....	2
	<hr/> 815

NOTE.—There are six pensioners in the Government Hospital for the Insane whose money is drawn by the treasurer and included above.

Farm account United States Soldiers' Home, October 1, 1893, to September 30, 1894, consolidated.

DR.		CR.—Continued.	
To labor, fuel, fertilisers, implements, seeds, and repairs.....	\$5, 531. 98	By 4, 423 heads lettuce	\$90. 71
Balance to credit of farm.....	1, 852. 73	3½ bushels okra.....	3. 02
	<hr/>	4, 571 bunches onions	22. 85
	7, 384. 71	1, 570 bunches parsley	67. 85
	<hr/> <hr/>	423½ bushels parsnips.....	213. 20
		1, 887 bushels potatoes, white.....	1, 051. 20
CR.		166½ bushels potatoes, sweet	83. 25
By 186½ bushels beets.....	104. 80	8½ bushels radishes.....	4. 88
47½ bushels beans, string.....	29. 54	242½ bushels salsify	216. 75
8, 290 heads cabbage.....	121. 89	180 bushels spinach	36. 03
40½ bushels carrots.....	26. 78	5, 162 pounds squash.....	51. 62
10, 510 stalks celery.....	317. 52	430½ bushels turnips.....	98. 70
7½ bushels cucumbers	4. 59	310½ bushels tomatoes	120. 35
750½ dozen ears corn, green.....	73. 70	300 tons hay¹.....	4, 500. 00
482 pounds horse radish.....	19. 28		<hr/>
452 bushels kale.....	135. 60	Total	7, 384. 71

Estimate of vegetables in the ground on United States Soldiers' Home farm, September 30, 1894.

2,000 heads of cabbage, at 4 cents.....	\$80.00
75 bushels of carrots, at 50 cents.....	37.50
2 tons horse-radish, at \$80.....	160.00
250 bushels kale, at 30 cents.....	75.00
400 bushels parsnips, at 75 cents.....	300.00
200 bushels potatoes, at 50 cents.....	100.00
250 bushels spinach, at 50 cents.....	125.00
400 bushels turnips, at 40 cents.....	160.00
25 bushels winter radish, at 50 cents.....	12.50
4 tons winter squash, at \$20.....	80.00
Total.....	1,130.00

¹ Ninety tons of this quantity of hay were lost by fire September 13, 1894, supposed to be the work of an incendiary.

Garden account of United States Soldiers' Home, from October 1, 1893, to September 30, 1894, consolidated. ♦

Dr.		CR.—Continued.	
To labor, fertilizers, seeds, tools, fuel, and implements.....		By 27,300 plants, trees, and shrubs raised in garden and greenhouse.	\$1,495.50
	\$3,503.43	73 cords of wood.....	109.50
CR.		balance to debit of garden expended in improvements of grounds.....	1,871.37
By 272 pounds grapes	8.16	Total.....	2,503.43
31½ bushels pears.....	18.90		

NOTE.—This department has the care of the ornamentation of the grounds, lawns, flowers, shrubs, trees, and fruit.

Annual report of members of the United States Soldiers' Home receiving outdoor relief September 30, 1894; rates of relief, pensions, etc.

Number receiving outdoor relief per month of—		Receiving pensions per month of—Continued.	
\$8	264	\$16	3
6	6	17	13
4	27	18	1
2	26	20	3
Total.....	323	22	1
Number on outdoor relief September 30, 1893..	299	24	4
Net gain during the year	24	25	1
Nonpensioners receiving outdoor relief	93	30	2
Receiving pensions per month of—		72	1
\$2	6	Total nonpensioners	93
4	26	Total pensioners	230
6	26		323
8	63	Mexican war survivors	132
10	6	Men who have served 25 years or over	44
12	72	Nonpensioners of latter number	6
14	2		

Eleven members of the Home on outdoor relief have died since date of last report; twenty-five members were dropped from outdoor relief after June 30, 1894, in compliance with resolutions of the Board of Commissioners, June 19, 1891, and July 21, 1894.

RICH. C. PARKER,
Bvt. Maj., U. S. Army, Secretary and Treasurer.

REPORT OF THE INSPECTION OF THE SOLDIERS' HOME.

WAR DEPARTMENT,
INSPECTOR-GENERAL'S OFFICE,
Washington, D. C., March 25, 1895.

SIR: I have the honor to submit a report of the inspection of the Soldiers' Home, begun March 8, 1895, with the assistance, as heretofore, of Major Sanger in all matters relating to the men, and Mr. Kent, the accountant of the Department, in the financial affairs.

Attention is invited to the accompanying exhibits for details as to sundry matters which have usually accompanied these reports of annual inspection.

The steady improvement which has characterized the conduct and condition of affairs of this Home from year to year during all the time that I have been inspecting it is exemplified again this year and deserves the heartiest commendation. In both economy and excellence the progress is decided, and though the officers most directly responsible may in some one particular or another, especially where the question of money is concerned, have preferred more rapid progress, they surely should be content that there is no deterioration anywhere and that wherever there has been a change it has been beneficial.

The inspection of the buildings began at the hospital, which has become a model of neatness as well as of perfect professional management. Here, as in one or two other places of the Home, there were indications of leaks and stained or fallen plaster, which may indicate merely the severity of the past winter or the recent change in the water supply, or some fault of original construction, but in no case did it indicate carelessness on the part of those in immediate charge. In making the necessary repairs, it is submitted that metal ceilings have special merits for cases like this.

The deputy governor, Capt. D. A. Irwin, is in charge of the barracks and discipline and is acting governor in General Stanley's temporary absence abroad. Comparing the condition of the barracks and mess hall with that reported a year ago, it may be said that, except for much needed repairs, it is excellent in all respects. The disappearance of insects, the disuse of kerosene oil on the floors, the addition of locker stands, barrack shoes, and mattress covers, and the scrupulous cleanliness of the dormitories, mess hall, and kitchen have contributed much to the comfort of the inmates of the Home, and added largely to its reputation as a model military institution. Everything that can be done without money has been done. New floors, painting and calcimining are needed throughout the Anderson and King buildings, and to some extent in Sherman and Scott halls and the annex, and it is understood that an allotment of funds for the purpose was made by the Commissioners some time ago, but up to date it has not been expended.

The smoking room under the central section of the dining room is dingy to a degree, having hardly an outside window, and is not infrequently overcrowded, though a large space in the annex is practically unoccupied where the old dining room was. There seemed also to be, space elsewhere for fifty or a hundred more beds in the dormitories, which is in marked contrast to the National Home for Disabled Volunteer Soldiers where some regulars are found housed in good comradeship and kindness. The bakehouse should be painted and an iron rack for the bread pans should be substituted for the wooden dresser in which they are now kept as a sure means of exterminating the roaches which infest it. They are not to be found in any other buildings of the Home, but unless prompt measures are adopted, they will no doubt soon invade the kitchen and mess hall, when their extinction will be difficult.

As quite a propagating plant is maintained for the grounds, possibly some ornamental development of the conservatories like those at Dayton or other volunteer Homes might prove a desirable addition.

No change in the system of messing reported one year ago has been made, and the rations and supplies of all kinds are reported excellent.

All issues of clothing have been witnessed by the deputy governor of the Home, and no losses from any cause have occurred.

The heating plant and shops were in good order, and though the general water-closet needs whitewashing, the great improvement in its construction and present condition over the discreditable state a few years ago is very marked.

There were two prisoners in confinement for introducing liquor and insubordinate conduct.

No complaints were received.

From what was seen at the pay table and elsewhere, it is submitted that the organization into companies and squads and the two roll calls daily, authorized in article 10 of the General Regulations of the Home, approved by the Secretary of War April 17, 1883, seem to be missed and would have a certain merit as they always have in such large bodies of men, especially those who have been trained to the military life. Otherwise article 10 needs modification.

ESTABLISHMENT.

This Home was established by the act of March 3, 1851, as a home for invalid and disabled soldiers, whether regulars or volunteers, of the war of 1812 and of all subsequent wars, and for every soldier of the Army of the United States who has served, or may serve, honestly and faithfully, twenty years in the same.

The original Board of Commissioners consisted of the General in Chief Commanding the Army, the generals commanding the Eastern and Western geographical military divisions, the Quartermaster-General, the Commissary-General of Subsistence, the Paymaster-General, the Surgeon-General, and the Adjutant-General of the Army. The act of March 3, 1859, provided that hereafter the Commissary-General of Subsistence, the Surgeon-General, and the Adjutant-General of the Army shall constitute the Board. The Board was enlarged by the act of March 3, 1883, to include the Commanding General of the Army, the Quartermaster-General, the Judge-Advocate-General, and the governor of the Home, with power to establish regulations for the general and internal direction of the institution, to be submitted to the Secretary of War for approval.

The executive officers of the Home named by the act of 1851 are a governor, a deputy governor, and a secretary, who shall also be treasurer. These officers shall be taken from the Army and appointed or removed, as the interests of the institution may require, by the Secretary of War, on the recommendation of the Board of Commissioners.

SUPPORT.

For the support of this Home it was provided that the sum of 12½ cents per month shall be deducted from the pay of every non-commissioned officer, musician, artificer, and private of the Army, but such deduction shall be made from the pay of volunteers only with their consent, and also the further sums consisting of the stoppages and court-martial fines against soldiers over and above any amount due the Government or individuals; all forfeitures on account of desertion, and all money belonging to the estates of deceased soldiers unclaimed for three years.

The first sum received for the purpose of carrying into effect this act was \$118,791.19, levied by General Scott, commanding general of the army in Mexico during the war with that Republic, and was turned over to the Commissioners July 5, 1851. The first member admitted to the Washington Home was Martin Fullman, Third Artillery, July 25, 1851.

GROUNDS.

The Home is located on the high ground directly north of this city distant about 4 miles from its center. It is admirably located and commands a very extensive view of the city of Washington, the distant Potomac and the historic hills of Maryland and Virginia. The grounds now consist of 502 acres, beautifully laid out in walks and drives, interspersed with lawn and woodland so attractive that it has become the favorite park for driving to the residents of the city. The amount expended for the purchase of these grounds was \$326,354.55. The latest purchase was in 1876, when the Woods farm, consisting of 38 acres, was bought for \$30,000. Of the 502 acres in the domain, 200 are set apart for hay grounds and 28 are under cultivation as the farm. The cost of the various permanent improvements from organization to include 1890 is reported as \$1,031,044.35. Since that date to the present there has been expended for like purposes \$33,254, making a total expenditure: For grounds, \$326,354.55; for buildings and permanent improvements, \$1,064,298.35; total, \$1,390,652.90.

BUILDINGS.

There are five barrack buildings, known as the Sherman and the Scott buildings, built of white marble or stone, and the Sheridan, the King, and the Anderson buildings of brick or stucco. The hospital, a large brick structure, occupies a prominent knoll to the south of the main building, and between these two buildings is a handsome stone chapel. The officers' quarters, two single, of white marble, and one double set, of brick, are pleasantly located on the road leading to the west gate. Immediately west of the Scott Building is the office of the governor and treasurer, a small brick building of four rooms. The library, a handsome brick building, is in the rear of the Scott Building, near which stands the water tower, of white marble, recently constructed, when connection was made with the city water system.

Other buildings on the grounds are a brick pump house, a steam-boiler house, six brick gatehouses, three frame cottages, a farm house with outbuildings, a brick stable, a deadhouse, a plain conservatory or propagating houses, and a root house. The storerooms, located in cellars and basement rooms of the barrack buildings, are of sufficient capacity and in good condition. The main buildings are lighted by gas and warmed by steam and hot air. Electric lighting would appear as needful here as at the volunteer Homes. The ventilation seemed to be good. In the dormitories the highest floor space per man is 506 square feet, the lowest 60 feet, and the average about 91 feet; and the air space per man was, highest 1,987.62 cubic feet; lowest 1,197.3 feet, with an average of 1,204 feet. This is in marked contrast with the crowded condition found in the National Home for Disabled Volunteer Soldiers, where the average floor space ranged from 47 to 63.5 square feet and the air space from 530 to 781 cubic feet. There were 53 vacant beds reported in the barracks. These larger Homes, where the members are numbered by the thousand, may usually be run for rather less per capita; but even the smallest volunteer Home presents an object lesson in economy.

MEMBERS.

The average number present during the month of February, 1895, was as follows: In barracks, 588; gatehouses, 10; farmhouse, 2; sleeping outside, 16; hospital, 107; total, 723. The average number present during the year ending September 30, 1894, was 733.75, while during the preceding year it was 751, and in 1892 it was 745. The highest number present was 782, on February 19, 1894, and the minimum was reached September 26, 1894, when only 658 were present; and there was an average of 380 members absent during the year, or 34 per cent of the membership, while at the national Homes only 19 per cent were absent. The average age of the members present September 30, 1894, was 54.4 years, and of those admitted since, 51 years. These averages are about three years younger than those prevailing at the national Homes.

DISCIPLINE.

Of the 1,850 persons cared for, less 293 transients, only 288, or 18 per cent, were tried for offenses against the rules, and of these 167 were tried but once, 74 twice, and 47 more than twice, and 82 per cent were not tried. This last average is a little less than that at the other Homes. The principal offenses seem to be due to the liquor habit. The punishment laid upon the offenders in aggravated cases is dismissal and in others suspension from the Home or labor on the grounds or roads. The guard-house, with a capacity for 10, was in good condition. Passes are given to the men when not undergoing punishment.

AMUSEMENTS.

The amusement room, provided with billiard and pool tables, and tables for cards, dominoes, chess, and games of like character, is in the basement of the main building, but it is poorly lighted and not well ventilated. Occasional dramatic entertainments are provided for from a small fund placed at the disposal of the governor. It is understood that the subject of building a suitable hall for this purpose is under consideration. The lack of an adequate and properly constructed amusement room is in decided contrast to both the volunteer Homes

and the newly constructed posts in the Regular Army. It is believed where opportunities for occupation and recreation under favorable circumstances are provided discipline is maintained more easily, and contentment and harmony improved. The band numbers 14 members, costing annually \$1,876. It gives an outdoor concert each day for about an hour when the weather is suitable. An increased allotment for the use and improvement of this band is suggested as soon as an adequate amusement hall is provided. The library contains 6,113 volumes, and 33 papers and 17 periodicals are subscribed for.

RELIGIOUS SERVICES.

Services by clergymen of the Episcopal, Lutheran, and Roman Catholic churches are held every Sunday—by the first two in the body of the chapel and by the latter in the basement.

WATER SUPPLY.

In the attempted solution of this question large sums have been expended in experiments with artesian wells, the tanks in barracks and hospital, etc., but it has for a time, at least, been solved by obtaining a direct supply from the city water system, though still under the necessity of pumping, and limited to the daily use of 25,000 gallons. To obtain the necessary pressure a water tower containing an iron tank of about 50,000 gallons' capacity has been erected at a cost of \$28,835.54, including the cost of connections, boiler, and pump; also \$1,250 paid to the Supervising Architect and \$428.92 to inspectors of materials.

FIRE DEPARTMENT.

The erection of the water tower and increase in water supply has added largely to the efficiency of the fire service. Standpipes with hose are found on several floors of the Scott, Sherman, and Sheridan buildings, supplemented with fire buckets filled with water in each of the barracks, except the Sherman. On the outside, at convenient stations, are 14 water plugs with 500 feet of hose available, in the care of an organized hose and reel company, the efficiency of which is frequently tested.

DISBURSEMENTS.

The disbursements and accounts of the treasurer from October 13, 1893, to March 8, 1895, were inspected and may be summarized as follows:

HOME FUND.

Balance on hand October 13, 1893	\$15, 286. 93
Received from United States Treasury:	
Interest account	\$113, 629. 81
Permanent fund	130, 000. 00
	<hr/>
	243, 629. 81
Received from sales.....	1, 696. 77
Received from collections.....	1, 494. 32
Received from pension fund.....	4, 672. 93
	<hr/>
	251, 493. 83
	<hr/>
Total to be accounted for	266, 780. 76
Disbursed as per vouchers	259, 745. 44
	<hr/>
Balance on hand March 8, 1895.....	7, 035. 32

PENSION FUND.

Balance on hand October 13, 1893	\$47, 631. 69
Received from pension agent	136, 361. 52
Total to be accounted for	183, 993. 21
Disbursed to pensioners	\$111, 766. 92
Transferred to Home fund	4, 672. 93
	116, 439. 85
Balance on hand March 8, 1895	67, 553. 36
Total balance March 8, 1895	74, 588. 68
Distributed as follows:	
United States Treasurer	\$73, 436. 38
Assistant treasurer United States, New York	917. 64
Cash on hand	234. 66
Total	74, 588. 68

Where officers have become accustomed to make all payments by check a decided preference is expressed for that more precise and satisfactory method. The keeping of cash on hand (with a depository so easily accessible) does not seem desirable either for the purpose of the most careful accounting nor for the safe-keeping of public funds. The demands for small cash payments do not seem to require an average cash balance for a year of over \$300 and at times extending to over \$600.

The statutes and Treasury regulations clearly require that all public funds shall be deposited, except when otherwise authorized by the proper officer. Two vouchers were found missing for some days. It was reported that they had been sent for signature to the payee, with the treasurer's check for the amount. The issuing of a check without a proper voucher therefor would seem to be inadvisable. The approval by the governor of vouchers for disbursements appears to be made after the accounts have all been paid. The check book and cash books were properly and neatly kept, but it would seem that the keeping of four and sometimes five concurrent abstracts was unnecessary. One abstract with a separate column for each class of disbursements would be more simple and avoid possible confusion in the numbering, entering, and filing of vouchers, and facilitate efficient supervision.

It is suggested that if the individual pension accounts were kept on separate cards after the manner adopted by the War Department for keeping its records, time, labor, and space would be economized. The average balance to the credit of the pension account remains about as shown at last inspection. The large balance of over \$44,000 remains idle, while a like amount is withdrawn from the interest-paying fund, and the interest is thus lost to the Home. Were it possible to encourage these men by a low interest on their small savings, less would probably be spent by them in wasteful ways injurious to their health, the discipline of the Home, and the credit of the uniform. Of the 553 pensioners at the Home December 31, 1894, 447, or over 80 per cent, had balances to their credit of their pension account, as shown by the following statement:

Pensioners who have balances to their credit at the United States Soldiers' Home December 31, 1894.

Less than \$100	293
Between \$100 and \$200	87
Between \$200 and \$300	37
Between \$300 and \$400	9
Between \$400 and \$500	7
Between \$500 and \$600	6
Between \$600 and \$700	2

Between \$700 and \$800	2
Between \$800 and \$900	1
Between \$900 and \$1,000	None.
Over \$1,000 (viz, 1 at \$1,080, 1 at \$1,365, and 1 at \$1,083).....	3
Pensioners having no balance	106

Total number of pensioners 553

The disposition to save is evident, and would seem only to require encouragement to cover a larger field. It may be only a coincidence, but it is remarked that the number of members who were not tried for any violations of the rules was 445, just 2 less than the number of members who had balances to their credit.

The transactions affecting the permanent fund during the past two years may be stated as follows:

	1893.	1894.
Balance September 30	\$2, 489, 940. 81	\$2, 479, 343. 32
Credit settlements	146, 402. 51	197, 693. 47
Withdrawn for current expenses	2, 636, 343. 32	2, 677, 036. 79
Balance September 30	157, 000. 00	103, 000. 00
	2, 479, 343. 32	2, 574, 036. 79

Since the above date, credit settlements have been issued in favor of the Home for \$92,500.13, and requisitions drawn thereon for \$42,000, showing an increase since September 30 of \$50,500.13, making a total balance at this date of \$2,624,536.92.

The large increase in the amount received from Treasury settlements during the past year is traced to the more rapid settlement of accounts and the bringing up to closer date the accounts formerly in arrears in the office of the Auditor, and to the decision of the Second Comptroller of December 12, 1893, that all retained pay due enlisted men at date of desertion was forfeited to the Home. This decision, it is estimated, nearly doubled the annual income of the Home from this source, amounting to about \$75,000 for last year's accounts. The recent legislation relating to retained pay will probably affect the income from this source.

EXPENSES.

The daily average number of members present during the year was 733.75, a decrease from last year of 17.25 and from 1892 of 11.25. The decrease is largely due to a more rigid scrutiny of the applicant and the discharge from the Home of men whose condition did not warrant their staying.

The current expenses of the year were..... \$189, 941. 67

From which deduct—	
Refunded to heirs of deceased soldiers.....	\$1, 441. 49
Refunded to heirs of deceased members.....	343. 73
Commutation to members outside.....	26, 404. 53
Insane members at asylum.....	3, 740. 62
Funeral expenses, outside members.....	100. 00
Permanent improvements	12, 709. 21
	44, 739. 58

Total expenses maintaining members.....	145, 202. 09
Average annual cost for each member.....	197. 89
Average cost for rations per man.....	67. 28
Average cost for clothing per man.....	19. 08
Average cost for laundry per man.....	4. 85
Average cost for other expenses per man.....	106. 68
	197. 89

This shows a reduction as compared with last year's expenses of \$19.56 per capita for maintenance, and it appears that this economy was secured without affecting the quantity or quality of the ration or clothing allowance. The average cost of maintenance at the national Homes last fiscal year was reported as \$127.45, for clothing \$16.07, and subsistence \$63.14. With a still further application of the contract system, a more rigid scrutiny of the clothing allowance and issue, and the most careful supervision all round, it seems evident that this commendable economy can not only be maintained, but still further improved with benefit rather than injury to all.

CONTRACTS.

Instead of the former method of purchasing groceries in open market, as noted in previous reports, it is found practicable now to purchase all the leading articles by contract, and at rates cheaper than those heretofore paid. Contracts are now made for six months for such quantities as may be required for the following articles: Bacon, ham, pickles, pork shoulders, butterine, milk, mackerel, beans, rice, black tea, green tea, coffee, green and roasted, sugar (A and C), vinegar, candles, soap, salt, pepper, mustard, sirup, cheese, and boneless codfish. Articles not contracted for are divided among the several successful bidders. The value of the trade was evidenced by the sharp competition of many of our leading grocers at the recent letting of the contracts. The apparent advantage to the Home will probably lead to a more extended list of articles to be so purchased. Contracts are also made for the purchase of coal, ice, forage, flour, beef, laundry work, clothing, bedding, and towels.

EMPLOYEES.

The amount expended for services during the year was as follows:

3 officers, difference between active and retired pay	\$2, 984. 88
28 non-commissioned officers	4, 756. 50
180 members	25, 556. 43
14 band	1, 876. 18
45 civilians	23, 116. 00
270	58, 289. 99

The amount paid for services is nearly 31 per cent of the total expenditures, and averages \$79.44 for each inmate, and the ratio of employees to average membership is nearly 37 per cent. The average daily pay to members is $39\frac{1}{2}$ cents; to civilians, \$1.43; and the highest daily pay to members is \$1.30; to civilians, \$3.50. Attention is invited to the similar figures for the volunteer Homes.

PENSIONERS.

The number of pensioners present September 30, 1894, was 582, and absent on outdoor relief, 230. The former were drawing pensions from \$2 to \$36 per month, while the latter received from \$2 to \$72 per month. The average pension is \$10.03 per month.

The amount received from the pension agent during the year was \$95,234.09, and paid to the pensioners, \$93,763.14. The balance due pensioners September 30, 1894, was \$46,613.37. One clerk, at \$20 per month, keeps the pension accounts and attends to all the clerical work pertaining to that duty.

STORES.

The value of quartermaster stores on hand September 30, 1894, was \$9,946.50, and of subsistence stores, \$481.85.

There was condemned during the year property whose original cost was \$297.75. Inventories of property are taken semiannually and rendered to the Board of Commissioners after verification by the treasurer. Nearly all the furniture and other property belonging to the Home, except in officers' quarters, is marked and taken up as public property, and all property not continuously in the possession of the treasurer and for which he is accountable, is receipted for to him by the custodian. A record is kept showing the amount expended on each building.

CLOTHING.

The following is the clothing allowance to each member of the Home every two years: 1 dark-blue coat, 1 dark-blue vest. Each year 1 pair sky-blue trousers, 1 unlined blouse, 1 straw hat, 1 black felt hat, 2 cotton shirts, 2 flannel shirts. Every four months 2 pairs woolen or cotton socks, 1 pair shoes, 1 pair cotton or flannel drawers. Two pairs dark-blue flannel trousers the first year and 1 pair yearly afterwards.

This clothing is regarded as the property of the Home, but is turned in only when the member leaves the Home, and not when new clothing is issued.

The above articles at the present contract price would cost for each annual allowance \$15.64½.

The issue of shoes seems to be very liberal, but there is no free provision made for their repair, as at other Homes. Would not white collars, such as are issued in the Army, and a uniform style for the coats and color for the trousers, improve the uniformity and appearance of the men when assembled?

At the national Homes the members have the following clothing allowance: Every five years, 1 great coat; every three years, 1 dress coat; every year, 1 cap, 1 blouse, 1 vest, 1 pair of trousers, 1 pair of shoes; every six months, 1 shirt, 1 pair cotton flannel drawers, 2 pairs socks.

The cost price per year for these articles is \$11.09. At every new drawing a careful examination is made of the article to be replaced.

TABLEWARE.

This ware seems to be good and of fairly durable quality. The capacity of the dining hall is sufficient to seat all the members simultaneously. The per cent of breakage of plates was but 20; of bowls, 47, and the total on all 31.

FARM.

There are 28 acres under cultivation devoted to market gardening. The principal crops raised were potatoes, cabbage, celery, tomatoes, etc., and 200 acres in hay, from which a crop of 300 tons was raised.

Exclusive of the hay, the value of the crop was stated as..... \$2,884.71

Of which the mess received.....	1,924.67
The hospital received.....	160.70
Consumed on farm.....	17.65
Issued to members.....	108.19
Issued to others.....	29.18
Estimate of vegetables in the ground.....	644.00
	<hr/>
	2,884.39

The hay crop is reported as 300 tons, valued at.....	\$4, 500. 00
Value of total crop.....	7, 384. 39
Expended on account of the farm.....	5, 531. 98
Balance to credit of farm	1, 852. 41

The garden is charged with \$2,469.53 on account of labor, seeds, tools, and fuel. This department has the care of the ornamentation of grounds, flowers, lawns, etc. Credit is claimed for \$997 on account of 18,200 plants, trees, and shrubs raised in the garden and greenhouse, and for \$109.50 for 73 cords of wood, at \$1.50 per cord, cut on the grounds. The dairy is maintained in name only, as the herd of cattle has been slaughtered. It is now charged with the expenses of the bringing of the milk from the railroad depot to the Home. It would seem this should be a proper charge to subsistence and the dairy account closed. The expense charged to the dairy last year was \$337.93. If the root house were under charge of the farm, would not some confusion as to issues and other matters be avoided? There is room for improvement in the manner in which these records are kept.

HOSPITAL.

The surgeon reports the capacity of the hospital as 85 beds, of which 78 were occupied September 30, 1894. The daily average number of sick during the year in hospital was 76.45, and at sick call 7. The principal diseases and percentage of each were: Alcoholism, 10.88 per cent; rheumatism, 9.11 per cent; tuberculosis, 7.09 per cent; heart disease, 6.33 per cent; senile debility, 4.3 per cent. The number of deaths during the year was 62, of which 35 died in hospital, 17 on outdoor relief, furlough, etc., 3 at the insane asylum, 3 in quarters (at Home), and 4 by suicide (at Home). The average age at death was 56.19, while at the national Homes it was 63.3. The death rate per 1,000 present and absent was 55.65; at the other Homes, 54.4. The average cost of the hospital ration is \$0.2143, including special diet.

The officers and employees are a surgeon and a hospital steward, paid from army appropriations, and a clinical assistant, with 31 employees, paid from the Home funds, \$6,369.36 annually. The surgeon reports the condition of the sewer system good, the facilities for bathing ample, the hygienic condition good, and water supply sufficient and satisfactory, but states that the few vegetables raised on the farm and issued to the hospital are of very inferior quality, that better ones can be had in the market for less cost, and that the milk is brought from a point several hours distant from the Home and is very much deteriorated, especially in summer, before reaching the hospital.

Attention is invited to Exhibit V, showing the list of medicines on hand and what is deemed to be a six months' supply.

Respectfully submitted.

J. C. BRECKINRIDGE,
Inspector General.

The SECRETARY OF WAR.

The following exhibits are appended:

- A. Statement relative to members on outdoor relief.
- B. Amount paid to civil employees during April, 1894.
- C. Names and rates of pay of inmates on extra duty April 30, 1894.
- D. Vegetables purchased in addition to those received from the farm for the year ending September 30, 1894.

- E. Prices paid for supplies during May, 1894.
- F. Recapitulation of expenditures from October 1, 1893, to September 30, 1894, and receipts and expenditures for fiscal year under each head.
- G. Amount expended on officers' quarters and permanent buildings from October 1, 1893, to September 30, 1894.
- H. Vegetables and fruit furnished Home and hospital mess from farm and garden for the year ending September 30, 1894.
- I. Home mess bill of fare for the week ending September 29, 1894.
- K. Number of horses and mules owned and employed September 30, 1894.
- L. Disbursements of the treasurer for the months of November, 1893, and June, 1894.
- M. Field return of the inmates January 29, 1895.
- N. Garden account from November 1, 1893, to June 30, 1894.
- O. Dairy account from November 1, 1893, to June 30, 1894.
- P. List of crockery ware used daily in Home mess hall from January 1 to December 31, 1894.
- Q. List of contracts for supplies and services, September 30, 1894.
- R. List of persons paid for services in more than one capacity, September 30, 1894.
- S. Statement showing the number of inmates present January 29, 1895, with length of army service; also, number of pensioners and rate of pension.
- T. Value of product by item of farm during year ending September 30, 1894.
- U. Hospital diet, general and special.
- V. List of medicines on hand September 30, 1894, and six months' supply received October 5, 1894.

A¹.—Statement relative to members of the United States Soldiers' Home on outdoor relief.

Average number for one year from October 1, 1893, to September 30, 1894.....	316
Total amount paid for outdoor relief during year ending September 30, 1894.....	\$26,404.53
Average amount paid per man for one year	83.5586
Average amount paid per man for one month	6.9632
Highest amount paid per man for one month	8.00
Lowest amount paid per man for one month.....	2.00

RICH. C. PARKER,
Brevet Major, U. S. A., Secretary and Treasurer.

A².—Annual report of members of the United States Soldiers' Home receiving outdoor relief September 30, 1894, rates of relief, pensions, etc.

Number receiving outdoor relief:		Receiving pensions—Continued.	
\$8 per month.....	264	\$16 per month.....	3
\$6 per month....	6	\$17 per month.....	13
\$4 per month.....	27	\$18 per month.....	1
\$2 per month.....	26	\$20 per month.....	3
Total.....	323	\$22 per month.....	1
Number on outdoor relief Sept. 30, 1893.....	299	\$24 per month.....	4
Net gain during the year.....	24	\$25 per month.....	1
Of the number receiving outdoor relief there are nonpensioners.....	93	\$30 per month.....	2
Receiving pensions:		\$72 per month.....	1
\$2 per month.....	6	Total nonpensioners	93
\$4 per month	26	Total pensioners	230
\$6 per month.....	26	Total.....	323
\$8 per month.....	63	Of this number there are Mexican war survivors.....	132
\$10 per month.....	6	Men who have served twenty-five years or over.....	44
\$12 per month.....	72	Of this latter number there are nonpensioners.	6
\$14 per month.....	2		

Eleven members of the Home on outdoor relief have died since date of last report, September 30, 1893.
Twenty-five members were dropped from outdoor relief after June 30, 1894, in compliance with resolutions of the Board of Commissioners June 19, 1891, and July 21, 1894.

RICH. C. PARKER,
Brevet Major, U. S. A., Secretary and Treasurer.

B.—Amount paid to civil employees during April, 1894.

One clerk to Board of Commissioners.....	\$100. 00
One clerk to the secretary and treasurer.....	100. 00
Dr. George H. Penrose, clinical assistant to the attending surgeon.....	100. 00
Rev. D. C. De Wulf, religious services and services of choir.....	65. 00
Rev. James A. Buck, religious services.....	50. 00
Rev. Gustav Facius, religious services.....	50. 00
Lulu Facius, services as organist and in choir.....	25. 00
One gardener and florist.....	50. 00
Twelve day laborers in garden and grounds.....	362. 24
One farm overseer.....	50. 00
Six farm laborers.....	190. 76
One driver of dairy wagon.....	19. 00
One plumber.....	85. 00
One tinner.....	75. 00
One blacksmith.....	75. 00
One chief engineer, boiler house.....	75. 00
One assistant engineer.....	60. 00
Three firemen, at \$33 per month.....	99. 00
One engineer at pump house.....	50. 00
One chief cook.....	50. 00
One assistant cook.....	25. 00
One chief baker.....	50. 00
One assistant baker.....	45. 00
One ambulance driver.....	20. 00
One man care horses, harness, and conveyances for treasurer.....	10. 00
Laborer digging trenches and opening sewers.....	21. 87
Total.....	1, 902. 87

RICH. C. PARKER,
Brevet Major, U. S. A., Secretary and Treasurer.

C.—Inmates on extra duty in the United States Soldiers' Home, District of Columbia,
April 30, 1894.

No.	Names.	On what work employed.	Pay per month.
1	Evans, Thomas.....	Sergeant-major and clerk.....	\$39. 00
2	Campbell, Alexander...	Commissary sergeant.....	18. 00
3	Wallace, William D.....	Quartermaster sergeant.....	18. 00
4	Gillies, Charles F.....	First sergeant, Scott Building.....	15. 00
5	O'Brien, James.....	First sergeant, King Building.....	15. 00
6	Kernahan, William.....	First sergeant, Sherman Building.....	15. 00
7	Blau, John.....	First sergeant, Sheridan Building.....	15. 00
8	Pownall, Joseph.....	First sergeant, Anderson Building.....	15. 00
9	Stauffer, Rudolph.....	Floor sergeant, King Building, and charge of kitchen.....	17. 00
10	Corcoran, John.....	Floor sergeant, Sheridan Building.....	12. 00
11	Maas, Joseph.....	Floor sergeant, Sherman Building.....	12. 00
12	Heens, Michael.....	do.....	12. 00
13	O'Malley, Michael.....	Floor sergeant, Scott Building.....	12. 00
14	Kerr, Henry.....	Floor sergeant, Sheridan Building.....	12. 00
15	Conroy, John.....	do.....	12. 00
16	Collins, Henry.....	Floor sergeant, Scott Building.....	12. 00
17	Pozygodzinski, Mareel..	Sergeant in charge of dining room.....	12. 00
18	Gaffney, William.....	Sergeant, superintendent of working parties on roads.....	20. 00
19	Elwood, William.....	Sergeant—provost sergeant.....	17. 00
20	Ring, Philip.....	Corpora. chief of police.....	15. 00
21	Ryan, Thomas W.....	Corporal, charge of billiard tables.....	10. 00
22	Tuffs, Richard W.....	Corporal, charge of stables, forage, etc.....	10. 00
23	Miller, Herman.....	Corporal, laundryman.....	10. 00
24	Wilson, Alexander.....	Corporal, charge of reel and hose company, fire department..	10. 00
25	Johnson, Robert.....	Corporal, assistant superintendent of working parties on road.	10. 00
<i>Home band.</i>			
1	Pownall, Joseph.....	Leader; paid also as first sergeant Anderson Building.....	15. 00
2	Stevenson, Lafayette...	First-class musician and bugler.....	20. 00
3	Dupins, Louis.....	First-class musician.....	12. 00
4	Morasca, Benedetto.....	do.....	12. 00
5	Owen, Henry C.....	do.....	12. 00
6	Ryan, James, 1st.....	do.....	12. 00
7	Ryan, James, 2d.....	do.....	12. 00
8	Schmuse, August.....	do.....	12. 00
9	Wessel, Henry.....	do.....	12. 00
10	Zimmerman, Francis.....	do.....	12. 00
11	Brown, Thomas G.....	Second-class musician.....	8. 00
12	McGrath, Henry.....	do.....	8. 00
13	Probst, John.....	do.....	8. 00
14	Smith, George.....	do.....	8. 00

C.—Inmates on extra duty in the United States Soldiers' Home, etc.—Continued.

No.	Names.	On what work employed.	Pay per month.
<i>Home buildings.</i>			
1	Barry, Dennis	Charge of bath and wash rooms, Sheridan Building	\$5.00
2	Fortner, Valentine	Laborer in amusement hall, Sheridan Building	7.00
3	Frates, William H.	Laborer in billiard hall	7.00
4	Grable, William	Charge of bath and wash rooms, Sheridan Building	5.00
5	Holt, Peter	Charge of main urinal and wash room, Sherman Building....	7.00
6	Johnson, Alfred	Attendant to blind inmates	10.00
7	Kiarbolling, William ...	Floor police for invalids, Scott Building	7.00
8	Louthood, Ralph	Assistant laundryman	7.00
9	Martin, William J.	Floor police and charge of bath and wash rooms, Anderson Building.	7.00
10	Moore, Jacob	Reader to the blind	7.00
11	Mair, William	Night watchman	10.00
12	McDade, Henry	Charge of bath and wash rooms, Scott Building	5.00
13	McMahon, Daniel	Charge of bath and wash rooms, Sherman Building	5.00
14	McElwee, John	do	5.00
15	Reed, Henry	Assistant laundryman	7.00
16	Sharps, George W.	Charge of bath and wash rooms, King Building	5.00
17	Stevens, Robert W.	Laborer in amusement hall, King Building	7.50
18	Teen, Simon B.	Charge of main water-closet	7.00
19	Welch, John	Night watchman	10.00
<i>Governor's office.</i>			
1	Hasselfeldt, Charles	Clerk and charge of tower clock	25.00
2	McGurn, James	Governor's orderly	10.00
3	Percy, Henry	Clerk	20.00
<i>Kitchen.</i>			
1	Cutler, Walter	Assistant cook	10.00
2	Gessler, Robert	do	10.00
3	Keaven, John	do	10.00
4	Lease, Jeremiah	do	10.00
5	Williams, George	do	10.00
6	Walton, Frank	Assistant cook and butcher	15.00
<i>Dining room.</i>			
1	Bluhm, Henry	Dining-room police	9.00
2	Barwis, Richard	do	9.00
3	Black, Richard	do	9.00
4	Burns, Edward	do	9.00
5	Bender, Jacob	do	9.00
6	Connor, William	do	9.00
7	Day, Samuel J.	do	9.00
8	Dupre, Paul	do	9.00
9	Erley, Michael	do	9.00
10	Fagan, Martin	do	9.00
11	Fortner, Charles E.	do	9.00
12	Gleason, Michael	do	9.00
13	Joyce, Patrick	Dining-room police	9.00
14	Jacobs, Jacob H.	do	9.00
15	Kern, Jacob	do	9.00
16	Gallagher, Daniel	do	9.00
17	Moran, William	do	9.00
18	Mair, Charles	do	9.00
19	O'Brien, John	do	9.00
20	O'Brien, Dennis	do	9.00
21	Rathgeber, Frank	do	9.00
22	Smith, Daniel	do	9.00
23	Weheesen, Edward	do	9.00
24	Wilkinson, John A.	do	9.00
<i>Home police</i>			
1	Klotz, William	House and general police	9.00
2	Moran, William	do	9.00
3	McNally, Thomas	do	9.00
4	Werner, Charles A.	do	9.00
<i>Library.</i>			
1	Sugden, Reuben	Sergeant, librarian	12.00
2	Segrist, Eugene	Corporal, assistant librarian	10.00
3	Kirchoff, Adolph	Bookbinder	15.00
<i>Grounds and roads.</i>			
1	Adams, Alexander H. ...	Laborer on roads	9.00
2	Byrnes, James	do	9.00

C.—Inmates on extra duty in the United States Soldiers' Home, etc.—Continued.

No.	Names.	On what work employed.	Pay per month.
<i>Grounds and roads—Continued.</i>			
3	Burke, William.....	Laborer on roads.....	\$9. 00
4	Carpenter, A. H.....	Gate keeper.....	7. 00
5	Cushing, Thomas.....	Laborer on roads.....	9. 00
6	Foley, John.....	do.....	9. 00
7	Ford, Patrick.....	Gate keeper.....	7. 00
8	Ivers, Richard G.....	do.....	7. 00
9	Kaiser, George A.....	Laborer on roads.....	9. 00
10	Murray, James.....	Gate keeper.....	7. 00
11	Mosser, Frederick.....	Laborer on roads.....	9. 00
12	McHugh, John.....	do.....	9. 00
13	McLaughlin, William.....	do.....	9. 00
14	O'Donnell, James.....	do.....	9. 00
15	Piedfort, Albert.....	Gate keeper.....	7. 00
16	Plunket, Walter.....	do.....	7. 00
17	Quill, Dennis.....	Laborer on roads.....	9. 00
18	Shea, Cornelius.....	do.....	9. 00
19	Scully, Daniel.....	do.....	9. 00
20	Uifalusey, Anton von.....	do.....	9. 00
21	Watkins, George S.....	do.....	9. 00
22	Walls, Thomas.....	Charge of lamps on Home grounds.....	7. 00
23	Young, Edward.....	Laborer on roads.....	9. 00
<i>Shops and woodhouse.</i>			
1	Bauman, Augustus M ..	Painter.....	15. 00
2	Burke, DeWitt C.....	do.....	15. 00
3	Cavanaugh, James.....	Carpenter.....	15. 00
4	Fitzpatrick, James.....	do.....	15. 00
5	Hastings, Mathias.....	Plumber's helper.....	10. 00
6	Kortmann, Louis.....	Upholsterer.....	15. 00
7	Krusemier, August.....	Laborer in woodhouse.....	9. 00
8	Stewart, Gilbert.....	Carpenter.....	15. 00
9	Williams, Thomas.....	Painter.....	15. 00
<i>Farm.</i>			
1	Burns, Luke.....	Laborer.....	9. 00
2	Murbach, Valentine.....	do.....	9. 00
3	Exell, Christian.....	do.....	9. 00
4	East, James.....	do.....	9. 00
5	Finen, John.....	do.....	9. 00
<i>Treasurer's office.</i>			
1	Condon, James.....	Clerk and telephone operator.....	20. 00
2	Harrison, Robert H.....	Clerk.....	30. 00
3	O'Connor, Jeremiah.....	do.....	20. 00
4	Wood, John J.....	Orderly.....	10. 00
<i>Miscellaneous.</i>			
1	Branch, Albert.....	Deputy governor's orderly.....	10. 00
2	Canty, Henry.....	Laborer in root and ice houses.....	9. 00
3	Dean, Lawrence.....	Mail carrier.....	15. 00
4	Gorman, William.....	Laborer in pump house.....	10. 00
5	Grosch, Andrew.....	Cart driver, laundry.....	9. 00
6	Monahan, Roger.....	Cart driver, commissary.....	9. 00
7	McDonald, Hugh.....	Cart driver, mail.....	9. 00
8	Turner, William.....	Labor in Home chapel.....	7. 00
9	Williams, W. H.....	Messenger to attending surgeon.....	10. 00
<i>Hospital.</i>			
1	Shafer, Henry.....	Commissary-sergeant.....	15. 00
2	Rubin, Charles A.....	Druggist.....	20. 00
3	Harrison, Gustave.....	Wardmaster.....	20. 00
4	Burke, James.....	do.....	20. 00
5	McMurray, James B. G.....	do.....	20. 00
6	Green, John.....	do.....	20. 00
7	Dempsey, Benj. F.....	do.....	20. 00
8	Bowker, Henry J.....	do.....	20. 00
9	Boerensen, Aug. A.....	Nurse.....	18. 00
10	Brockman, Herman.....	do.....	18. 00
11	Gordon, James.....	do.....	18. 00
12	Gallagher, James.....	do.....	18. 00
13	Bernasco, Albert.....	Nurse.....	18. 00
14	Lemay, Louis.....	do.....	18. 00
15	Schultz, Charles.....	Chief cook.....	20. 00
16	Beck, Fritz.....	Assistant cook.....	10. 00
17	Weisner, William.....	Dishwasher.....	9. 00

C.—Inmates on extra duty in the United States Soldier's Home, etc.—Continued.

No.	Names.	On what work employed.	Pay per month.
<i>Hospital—Continued.</i>			
18	Strehler, Rudolph L.	Dishwasher	\$9.00
19	Shook, Edward S.	Chief of dining room	10.00
20	Wright, Reuben M.	Assistant, dining room	9.00
21	Weigl, Conrad.	do	9.00
22	Rann, Price.	Fireman	10.00
23	Carter, Andrew.	Assistant fireman	9.00
24	Coubliq, Thomas.	Messenger	9.00
25	Mason, Joseph.	Watchman	9.00
26	Clemens, Eugene L.	do	9.00
27	Donohue, John.	Hall man	9.00
28	Thompson, Wallace.	Librarian	5.00

RICH. C. PARKER,
Brevet Major, U. S. A., Secretary and Treasurer.

D.—Vegetables purchased in addition to those received from the farm for the year ending September 30, 1894.

Date of purchase.	Cab- bage.	Pota- toes, white.	Thyme.	Grapes.	Onions.	Cab- bage.	Sage.	Cran- berries.	Pep- pers.	Pota- toes, sweet.
1893.	<i>Heads.</i>	<i>Bushels.</i>	<i>Bunch.</i>	<i>Bask'ts.</i>	<i>Bush.</i>	<i>Bbls.</i>	<i>Lbs.</i>	<i>Bbls.</i>	<i>No.</i>	<i>Boxes.</i>
October.....	200	172	200	200	14	1				
November		310	150		22		3	1½	15	1
December		230			16	1		1½		1
1894.										
January		340	100		21					1
February		190	150		17	2				1½
March		180	50		25	2				
April		190	50		17					
May		232	100		21					
June.....	1,675	152	100		15	2				
July	1,300	40	50		18	5				
August.....	300				23					
September.....	600		50	105	16	1			25	
Total.....	4,075	2,036	1,000	305	225	14	3	3	40	4½
Cost	\$242.25	\$1,647.65	\$17.50	\$55.00	\$234.25	\$29.55	\$1.50	\$18.00	\$9.75	\$4.15

Date of purchase.	Pota- toes, sweet.	Or- anges.	Apples.	Yams.	Pep- pers.	Green onions.	Cab- bage.	Aspar- agus.	Rad- ishes.	Straw- berries.
1893.	<i>Barrels.</i>	<i>Boxes.</i>	<i>Barrels.</i>	<i>Barrels.</i>	<i>Bunch.</i>	<i>Bunch.</i>	<i>Crates.</i>	<i>Bunch.</i>	<i>Bunch.</i>	<i>Quarts.</i>
October.....										
November										
December	9	12	10							
1894.										
January										
February		10		3	6					
March						1,300				
April						600	5			
May				3		1,000	3	120	650	225
June				2½						224
July				3						
August.....	5			5						
September.....	8									
Total.....	22	22	10	16½	6	2,900	8	120	650	449
Cost	\$54.25	\$46.50	\$38.75	\$38.50	\$0.25	\$20.25	\$14.25	\$12.00	\$6.50	\$22.45

D. —Vegetables purchased in additon to those received from the farm, etc.—Continued.

Date of purchase.	String beans.	Water-melons.	Green pease.	Toma-toes.	Squash.	Pota-toes, white.	Green pease.	Green corn.	String beans.	Canta-loupes.	Total.
1893.	<i>Bush.</i>	<i>No.</i>	<i>Quarts.</i>	<i>Boxes.</i>	<i>Barrels.</i>	<i>Barrels.</i>	<i>Bbls.</i>	<i>Dozen.</i>	<i>Boxes.</i>	<i>Barrels.</i>	
October.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	\$211. 25
November.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	262. 40
December.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	274. 65
1894.											
January.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	256. 25
February.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	182. 00
March.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	159. 75
April.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	189. 50
May.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	323. 55
June.....	14	.....	.....	.....	5	6	1	.....	.....	.....	354. 40
July.....	18	.....	.....	.....	.....	9	1	200	5	.....	259. 55
August.....	.....	300	66	.....	.....	.....	.....	83½	.....	25	146. 56
September.....	11	.....	.....	45	.....	.....	.....	.....	.....	12	126. 50
Total..	43	300	66	45	5	15	2	283½	5	37	
Cost.....	\$40. 75	\$31. 60	\$3. 96	\$13. 50	\$5. 00	\$36. 50	\$4. 50	\$55. 00	\$5. 50	\$45. 75	\$2, 746. 36

RICH. C. PARKER,
Brevet Major, U. S. A., Secretary and Treasurer.

E.—Prices paid for supplies during May, 1894.

[illegible]

E.—Prices paid for supplies during May, 1894—Continued.

Articles purchased.	G. Taylor Wade.	Harrison G. Otis.	R. A. Golden.	Nicholas Auth.	Home Ice Co.	Browning & Mid- dleton.	Golden, Love & Co.	J. J. Hogan.	Somerset R. Waters.
Cabbage per crate..	\$1. 50								
Milk per gallon..		\$0. 15							
Chicken per pound..		. 12					{ \$0. 10 . 11 . 12 }		
Fresh fish do....			\$0. 08						
Head-cheese do....				\$0. 09					
Pork sausage do....				. 09					
Bologna sausage..... do....				. 09					
Liver pudding..... do....				. 09					
Ice per cwt....					\$0. 40				
Hominy per pound..						\$0. 02			\$0. 01½
Macaroni do....						. 10			. 09
Evaporated pears..... do....						. 10			
Extract vanilla..... per dozen..						2. 25			2. 00
Thyme per bunch..						. 02			. 01½
Cayenne pepper..... per pound..						. 25			
Evaporated cherries..... do....						. 11			
Pork shoulders do....						. 08			. 07½
Clams..... per gallon..								. 75	
Rice per pound..									. 05
Candles..... do....									. 10
Soap..... do....									. 05
Green coffee do....									. 21
Oyster crackers..... do....									. 06
Evaporated peaches do....									. 10½
Pickles per barrel..									8. 50
Molasses..... per gallon..									. 35
Tea per pound..									{ . 24 . 27
Mackerel per barrel..									13. 75
Corn meal..... do....									2. 50
Canned pease.... per dozen cans..									1. 20
Savory per dozen..									1. 00
Washington beer..... do....									. 50
Faust beer..... do....									. 75
Lima beans do....									1. 25
Canned corn do....									1. 00
Lima beans do....									1. 25
Corn meal..... per pound..									. 01½
Potted chicken per can..									. 30
Chocolate..... per pound..									. 40
Soda crackers..... do....									. 07
Currants..... do....									. 06
Farina do....									. 08
Lemons..... per dozen..									. 20
Marrowfat pease..... do....									1. 20
Green pease..... per pound..									. 04
Prunes..... do....									. 09
Canned French soups..... per dozen..									3. 50
Potted turkey..... per can..									. 30
Rollad tongue..... do....									. 80
Vermicelli..... per pound..									. 10
L. and P. sauce..... per bottle..									. 50
Olive oil do....									. 50
C. and B. pickles do....									. 35
Rollad oats..... per pound..									. 03
Tripe do....									. 04½
Yeast cake per cake..									. 02
Breakfast bacon per pound..									. 10

RICH. C. PARKER,
Brevet Major, U. S. A., Secretary and Treasurer.

F.—Recapitulation of expenditures from October 1, 1893, to September 30, 1894.

Furniture for officers' quarters and expenses thereof.....	\$443.50
Compensation of the governor, deputy governor, treasurer, and clerk to Board of Commissioners.....	4,184.88
Transportation furnished to discharged soldiers en route to the Home and refunded to Quartermaster's Department.....	635.65
Fuel for the Home.....	7,410.80
Expenses of the hospital for medicines, medical stores, spectacles, false teeth, materials for coffins, etc.....	1,606.76
Expenses of the hospital for mess and kitchen purposes and all running expenses, including compensation to inmates on duty and pay of civilian employees.....	17,912.42
Refunded to claimants as heirs of deceased soldiers.....	1,441.49
Refunded to claimants as heirs of deceased inmates.....	342.73
Clothing for inmates.....	14,004.42
Subsistence stores and ice, including special diet and stimulants for the sick.....	42,120.40
Articles for the Home bakery, repairs, etc., except flour, salt, hops, and potatoes.....	242.95
Bedding for inmates, bedsteads, blankets, upholsterers' materials.....	1,804.05
Farm, garden, and dairy utensils, seeds, guano, manure, etc., cultivation of garden, ornamentation of grounds, pay of farm, garden, dairy, and other employees.....	18,272.88
Mess and kitchen utensils and other articles, except bedding for the Home.....	1,518.42
Material for general repairs to buildings, repair of roads and fences, purchase and repair of harness, vehicles, and purchase of mechanical tools.....	2,436.21
Forage and medicines for Home animals, articles used in stables, straw used as bedding for inmates.....	1,656.91
Expenses of the library, governor's and treasurer's offices, postage, post-office box rent, stationery, etc., for Commissioners' office, freight, telegrams, and amusements.....	1,234.95
Incidental expenses, removal of night soil, rent of telephone, hack hire, advertising, traveling expenses, professional services, and expenses Home chapel.....	629.21
Religious services.....	2,280.00
Laundry work for the Home.....	3,559.27
Compensation to inmates on duty and monthly allowance inmates nonpensioners.....	20,260.57
Commutation to inmates of the Home residing outside.....	26,404.53
Gas for the Home, including rental of Amick's gas regulators.....	2,986.75
Board and medical treatment of members of the Home in Government Hospital for the Insane.....	3,740.62
Funeral expenses of members of the Home residing outside.....	100.00
New buildings, payment on water tower, water tank, new boiler, and steam pump.....	8,538.67
Permanent improvements, new fences, wells, repair of bridges, lamp-posts, gas lamps, paving, sewerage, etc.....	4,170.54
Total expenditures.....	189,941.67

I certify that this account is correct.

RICH. C. PARKER,
Brevet Major, U. S. A., Secretary and Treasurer.

F².—Receipts and expenditures for fiscal year under each head at United States Soldiers' Home, Washington, D. C.

	Receipts.	Expenses.
Commutation to members outside.....	\$27,300.00	\$26,404.53
Subsistence and ice.....	51,107.50	49,370.84
Clothing.....	14,393.98	14,004.42
Current expenses.....	30,363.26	30,960.19
Household.....	29,771.56	28,802.36
Hospital.....	12,883.92	12,267.74
Transportation.....	994.56	635.65
Construction.....	17,740.25	17,709.21
Farm.....	5,834.20	5,531.98
Garden.....	3,465.70	2,469.53
Posthumous fund.....	5,382.40	1,785.22
Any other fund.....	1,144.49	.....
Total.....	200,381.82	200,381.82

G.—Amount expended on officers' quarters and permanent buildings from October 1, 1893, to September 30, 1894.

House No. 1, quarters of governor.....	\$176.60
House No. 2, quarters of deputy governor.....	95.95
House No. 3, quarters of treasurer.....	57.37
House No. 4, quarters of surgeon.....	113.67
Total.....	443.59

On account of repairs and construction of permanent buildings.

East gate lodge, painting and repairs thereto.....	\$32. 11
First street gate lodge, new well, plumbing, professional services of architect	272. 53
Pump house, new grates to boilers, final payment, new boiler, steam pump, and electrical alarm.....	3, 135. 76
Barnes Hospital, repairs, paints and oils, repairs to furnaces and elevator.....	239. 66
New water supply, services of inspector, professional services of architect, masonry work, and services of plumber in connecting with tower	6, 396. 26
Greenhouse, repairs and purchase of materials thereto	166. 83
King Building, repairs to porches and plumbing repairs	451. 12
Anderson Building, plumbing work, carpenters' and painters' work, services of architect..	666. 37
Boiler house, repairs to steam apparatus, repairing furnaces	249. 58
Main privy, plumbing, concreting, carpenters' work, and services of architect supervising construction.....	1, 577. 50
Roads and grounds, purchase of gravel for repairs to roads and brick for repairs to side-walks.....	306. 80
Home fire department, lumber for hose-carriage house, hose couplings, etc.....	343. 17
Home dining room, repairs to plastering, new tables and repairs thereto.....	49. 71
Home chapel, repairs to cushions.....	36. 30
Amusement room, repairs to billiard, pool, and bagatelle tables and purchase of chairs.....	128. 80
Home kitchen, repairs, plumbing work, etc	42. 62
Home buildings, making stands for lockers.....	300. 00
Scott Building, repairs to tank, porches, and cleaning marble work on outside of building..	489. 92
Home bakery, repairs to ovens	70. 13
Total.	14, 935. 17

RICH. C. PARKER,
Brevet Major, U. S. A., Secretary and Treasurer.

H.—Vegetables and fruit furnished Home and hospital mess from farm and garden for the year ending September 30, 1894.

	Value of vegetables.	Value of fruit.
Home mess	\$1, 900. 72	\$23. 95
Barnes Hospital.....	151. 04	9. 66
Total	2, 051. 76	33. 61

Average number of men in Home and hospital during same period 734

NOTE.—After June 30, 1893, milk was purchased under contract, owing to the destruction of the herd.

RICH. C. PARKER,
Brevet Major, U. S. A., Secretary and Treasurer

I.—Home mess bill of fare for the week ending September 29, 1894.

Sunday, September 23, 1894.—Breakfast: Sliced corned beef, potatoes, bread, butter, and coffee. Dinner: Roast beef with gravy, sweet potatoes, beets, rice pudding, potato salad, bread, milk, and coffee. Supper: Coffee cake, bread, butter, sirup, and tea. Milk consumed (59½ gallons): For coffee, 11; for tea, 6; for kitchen, 2½, and for mess hall, 40 gallons.

Monday, September 24, 1894.—Breakfast: Ham, hominy, bread, butter, and coffee. Dinner: Vegetable soup, boiled beef, potatoes, beets, bread, milk, and coffee. Supper: Stewed pears, bread, butter, and tea. Milk consumed (59½ gallons): For coffee, 11; for tea, 6; for kitchen, 4½, and for mess hall, 38 gallons.

Tuesday, September 25, 1894.—Breakfast: Beef stew, tomatoes, bread, butter, and coffee. Dinner: Roast beef with gravy, potatoes, tomatoes, pickles, bread, milk, and coffee. Supper: Stewed tripe, bread, butter, sirup, and tea. Milk consumed (57½ gallons): For coffee, 11; for tea, 6; for kitchen, 8½; and for mess hall, 32 gallons.

Wednesday, September 26, 1894.—Breakfast: Corned-beef hash, bread, butter, and coffee. Dinner: Vegetable soup, corned beef, sweet potatoes, beets, grapes, bread, milk, and coffee. Supper: Stewed apricots, bread, butter, and tea. Milk consumed (67½ gallons): For coffee, 11; for tea, 6; for kitchen, 4½; and for mess hall, 46 gallons.

Thursday, September 27, 1894.—Breakfast: Mackerel, potatoes, bread, butter, and coffee. Dinner: Stewed mutton, potatoes, beets, grapes, bread, milk, and coffee. Supper: Corn bread, sirup, bread, butter, and tea. Milk consumed (62½ gallons): For coffee, 11; for tea, 6; for kitchen, 3½; for bakery, 8; and for mess hall, 34 gallons.

Friday, September 28, 1894.—Breakfast: Codfish hash, bread, butter, and coffee. Dinner: Baked fish, cold sliced meat, potatoes, macaroni, beets, bread, milk, and coffee. Supper: Bread, cheese, butter, sirup, and tea. Milk consumed (57½ gallons): For coffee, 11; for tea, 6; for kitchen, 6½; and for mess hall, 34 gallons.

Saturday, September 29, 1894.—Breakfast: Beef stew, bread, butter, and coffee. Dinner: Pork shoulders, cabbage, potatoes, beets, bread, milk, and coffee. Supper: Oatmeal mush, sirup, bread, butter, and tea. Milk consumed (62½ gallons): for coffee, 11; for tea, 6; for kitchen, 13½; and for mess hall, 32 gallons.

D. S. STANLEY,
Brigadier-General, U. S. A., Governor.

K.—Number of horses and mules owned and employed at the United States Soldiers' Home, District of Columbia, September 30, 1894.

Horses:	
For carts on roads, grounds, and police.....	6
For laundry wagon.....	2
For market wagon.....	2
For mail wagon.....	1
For hospital ambulance.....	2
For use of provost-sergeant.....	1
Total.....	14
Mules:	
For use of Home farm.....	8

Transportation.

	Use of—		
	Gov- ernor.	Deputy gov- ernor.	Treas- urer.
Forage for horses.....	2	2	2
Buggy and single harness.....			1

RICH. C. PARKER,
Brevet Major, U. S. A., Secretary and Treasurer.

L¹.—Disbursements of the treasurer of the United States Soldiers' Home for the months of November, 1893, and June, 1894.

SERVICES RENDERED.

Nature of service.	November, 1893.	June, 1894.
Transportation furnished to discharged soldiers en route to the Home.....	\$109.28	\$77.22
Refunded to heirs of deceased soldiers.....	97.93	41.85
Refunded to heirs of deceased inmates.....	180.11	31.36
Services for printing forms for Home.....	6.00	2.00
Repairs to elevator at hospital.....	64.00	.....
Services papering and furnishing materials, houses Nos. 1 and 2.....	42.35	.....
Difference in pay (active and retired), Brig. Gen. D. S. Stanley, United States Army, governor.....	114.58	114.58
Difference in pay (active and retired), Bvt. Maj. R. C. Parker, United States Army, secretary and treasurer.....	75.83	75.83
Difference in pay (active and retired), Capt. D. A. Irwin, United States Army, deputy governor.....	58.33	58.33
Compensation to clerk in office Board of Commissioners.....	100.00	100.00
Services of clinical assistant to the attending surgeon, Barnes Hospital.....	100.00	100.00
Services removing night soil.....	50.00	.....
Religious services in Home chapel.....	190.00	190.00
Rental of Amick's gas regulators.....	20.00	20.00
Laundry work for Home and hospital.....	412.02	403.54
Services repairing coffee boiler, Home dining room.....	6.00	.....
Payments for freight charges, advertising, telegrams, postage stamps, and post-office box rent.....	7.53	5.46
Laborers in gravel pit and digging trenches for relaying pipes.....	46.25	11.25
Pay of gardener and florist.....	50.00	50.00
Laborers in garden and grounds.....	193.44	209.51
Overseer of farm.....	50.00	50.00
Laborers on farm.....	178.80	197.00

L¹.—Disbursements of the treasurer of the United States Soldiers' Home, etc.—Continued.

SERVICES RENDERED—Continued.

Nature of service.	November, 1893.	June, 1894.
Driver of dairy wagon.....	\$19.00	\$19.00
Clerk to secretary and treasurer.....	100.00	100.00
Plumber.....	85.00	85.00
Tinner.....	75.00	75.00
Blacksmith.....	75.00	75.00
Chief engineer, boiler house.....	75.00	75.00
Assistant engineer, boiler house.....	60.00	60.00
Engineer, pump house.....	50.00	50.00
Three firemen at boiler house, at \$33 each per month.....	99.00	99.00
Chief cook for Home mess.....	50.00	50.00
Assistant cook for Home mess.....	25.00	25.00
Chief baker.....	50.00	50.00
Assistant baker.....	45.00	45.00
Pay of ambulance driver.....	20.00	20.00
Services of man in charge of horses, harness, and conveyances for the treasurer.....	10.00	10.00
Compensation to inmates on duty at the Home.....	1,425.98	1,415.95
Compensation to inmates on duty at Barnes Hospital.....	408.99	415.40
Compensation to inmate musicians Home bands.....	154.02	151.00
Monthly allowance to inmates nonpensioners.....	118.81	113.23
Services tapping water main at Whitney avenue gate.....		3.00
Services repairing 89 white jackets, at 10 cents each.....		3.90
Board and medical treatment of members of the Home in Government Hospital for the Insane.....		910.00
Rental of telephone exchange.....		60.00
Carriage hire for Board of Commissioners during their official visits to the Home.....		3.00
Harvesting hay crop.....		509.37
Total.....	5,098.25	6,160.77

L².—Disbursements of the treasurer of the United States Soldiers' Home for the months of November, 1893, and June, 1894.

PURCHASE OF PROVISIONS.

Articles.	November, 1893.		June, 1894.	
	Quantities.	Value.	Quantities.	Value.
Butterine.....pounds..	2,300	\$368.00	2,524	\$348.48
Bacon.....do.....	2,219	297.71	658	60.74
Beans.....do.....	470	16.45	400	14.00
Rice.....do.....	100	5.00	300	17.00
Roasted coffee.....do.....	1,500	385.50	1,550	387.50
"A" sugar.....do.....	2,021	101.68	2,038	85.03
"C" sugar.....do.....	2,045	91.37	2,196	73.85
Soap.....do.....	540	28.05	660	30.90
Salt.....do.....	450	2.25	450	2.15
Mustard.....do.....	48	18.48	42	14.70
Pepper.....do.....	24	4.44	12	2.16
Ham.....do.....	2,076	250.31	1,530	186.54
Codfish.....do.....	720	48.30	105	6.84
Canned tomatoes.....dozen..	28	30.90	38	38.40
Flavoring extract, lemon.....do.....	2	3.50	2	3.90
Flavoring extract, vanilla.....do.....	1	2.50		
Royal baking powder.....pounds..	15	6.60	36	15.70
Flour.....barrels..	60	268.13	53	221.05
Canned peas.....dozen..	2	2.60		
Eggs.....do.....	394	94.10	1,432	190.40
Ground cinnamon.....pounds..	2	.50	1	.25
Hominy.....do.....	300	6.60	110	1.65
Sal soda.....do.....	600	10.50	150	2.25
Mackerel.....barrels..	5	79.75	3	41.25
Evaporated apples.....pounds..	350	39.50	160	24.00
Evaporated peaches.....do.....	300	34.00	100	16.00
Prunes (California).....do.....	30	3.30	100	10.00
Raisins.....do.....	50	4.40	50	4.60
Sirup.....gallons..	56	15.12	54	16.20
Rolled oats.....pounds..	220	6.70	50	1.50
Pickles.....barrels..	1	8.00		
Thyme.....bunches..	150	2.75	100	2.00
Sage.....pounds..	3	1.05		
Lard.....do.....	38	4.69		
Oyster crackers.....do.....	70	4.83	15	.90
Vinegar.....gallons..	46	4.60	97	9.70
Potatoes, white.....bushels..	325	232.65	152	199.20
Oysters.....gallons..	170	127.50		

L².—Disbursements of the treasurer of the United States Soldiers' Home, etc.—Continued.

PURCHASE OF PROVISIONS—Continued.

Articles.	November, 1893.		June, 1894.	
	Quantities.	Value.	Quantities.	Value.
Onions.....bushels..	22	\$16.50	15	\$21.75
Peppers.....number..	15	.25		
Sweet potatoes.....boxes..	1	.75		
Fresh fish.....pounds..	1,165	93.20	2,000	160.00
Apples.....barrels..	8	28.00		
Head-cheese.....pounds..	390	35.10		
Pork sausage.....do....	1,905	171.45		
Bologna sausage.....do....	290	26.10		
Fresh pork.....do....	1,505	165.55		
Chickens.....number..	10	4.60	13	6.00
Cheese.....pounds..	638	85.50	428	50.41
Chickens.....do....	36	5.04		
Ice.....do....	17,600	70.40	40,350	161.40
Mince-meat pies.....number..	410	61.50		
Green coffee.....pounds..	9	1.94	9	2.07
Granulated sugar.....do....	165	8.06	110	4.89
Ground ginger.....do....	7	1.75	1	.20
Molasses.....gallons..	30	10.50	4	1.40
Corn meal.....barrels..	1	2.50	2	5.00
Tea.....pounds..	153	39.36	228	57.48
Macaroni.....do....	112	10.70	112	11.70
Savory.....boxes..	12	.75		
Candles.....pounds..	3	.30	12	1.20
Graham flour.....barrels..	1	4.00	1	3.75
Baking soda.....pounds..	4	.20		
Lima beans.....dozens..	1	1.20	2	2.00
String beans.....cans..	6	.40		
Cornstarch.....pounds..	12	.84		
Canned corn.....cans..	48	3.95		
Chocolate.....pounds..	3	1.20	6	2.25
Soda crackers.....do....	51	3.57	27	1.62
Currants.....do....	10	.70	5	.25
Tapioca.....do....	50	3.00	40	2.00
Rolled tongue.....cans..	2	1.50		
Vermicelli.....pounds..	12	1.20	6	.66
L. and R. sauce.....bottles..	3	1.50		
Potted ham.....cans..	6	1.00		
Mushrooms.....do....	6	1.50		
Cucumber pickles.....gallons..	12	3.00		
C. and B. pickles.....bottles..	2	.70		
Split pease.....pounds..	50	1.75		
Green pease, canned.....cans..	12	1.25	12	1.25
French soups.....do....	12	3.60	6	2.00
Corn meal.....pounds..	25	.38	10	.50
Powdered sugar.....do....	10	.60		
Beer.....dozen..	14	7.00	14	9.00
Yeast cakes.....number..	3	.06	1	.02
Nutmeg.....ounces..	2	.15		
Dublin stout.....dozen..	4	8.00		
Sardines.....dozen boxes..	1	1.50		
Fresh beef.....pounds..	10,758	588.46	11,236	614.60
Corued beef.....do....	1,400	38.50	2,600	71.50
Fresh mutton.....do....	962	72.15	1,806	135.45
Turkey.....do....	1,147	157.71		
Cranberries.....barrels..	1½	9.00		
Hops.....pounds..	12	7.20	10	6.00
Milk.....gallons..	1,594	286.92	2,210	375.21
Lemons.....dozen..	3	.60	12	2.16
Pigs' feet.....kegs..			6	11.40
Ground mace.....pounds..			1	.80
Pork shoulders.....do....			2,231½	166.15
Gelatin.....papers..			4	.64
Chowchow.....bottles..			2	.70
Olive oil.....dozen..			2½	6.63
Sauce.....pints..			2	.90
Dried pease.....pounds..			70	2.10
Chopped beef.....do....			100	10.00
Sausage meat.....do....			35	3.85
Malt.....do....			15	.60
Pigs' feet.....do....			720	36.00
Oxalic acid.....do....			1	.25
Borax.....do....			1	.18
Barley.....do....			100	3.50
Cloves.....do....			1	.25
Clams.....gallons..			40	30.00
Cabbage.....heads..			1,675	72.50
Strawberries.....quarts..			224	11.20
Yams.....barrels..			2½	7.50

L².—Disbursements of the treasurer of the United States Soldiers' Home, etc.—Continued.

PURCHASE OF PROVISIONS—Continued.

Articles.	November, 1893.		June, 1894.	
	Quantities.	Value.	Quantities.	Value.
String beans.....bushels.....			17	\$14. 50
Squash.....barrels.....			5	5. 00
Cabbage.....do.....			2	3. 00
Green pease.....do.....			1	2. 00
Potatoes, white.....do.....			6	18. 50
Tripe.....pounds.....			160	6. 00
Flaked oats.....barrels.....			1	5. 50
Evaporated cherries.....pounds.....			100	12. 50
Evaporated pears.....do.....			100	12. 50
Total		\$4, 666. 40	.....	4, 187. 22

L³.—Disbursements of the treasurer of the United States Soldiers' Home for the months of November, 1893, and June, 1894.

PERMANENT IMPROVEMENTS, NEW FENCES, WELLS, REPAIR OF BRIDGES, LAMP-POSTS, GAS LAMPS, ETC., PAVING, AND SEWERAGE.

Nature of expenditure.	November, 1893.	June, 1894.
Wash basins, 2 water-closets, 1 urinal, 2 bath tubs, carpentering and plumbers' work, Anderson Building.....	\$569. 00	.....
Masonry work on new water tower and services of inspector, work, and material.....	4, 478. 00	.....
Professional services testing materials for new water-tower tank.....	21. 67	.....
Plumbing and concreting work in main privy building.....	1, 540. 00	.....
Brick for walk at First-street gate lodge.....	18. 00	.....
Services pointing up stone and cleaning down same, furnishing material, Scott Building.....	.....	\$156. 00
Total	6, 626. 67	156. 00

PURCHASE OF GENERAL SUPPLIES.

Medicines, hospital supplies, trimmings for coffins, stationery, spectacles, purchase and repairs to surgical instruments, and miscellaneous articles for Barnes Hospital.....	\$444. 75	\$129. 12
Steam fittings, hardware, plumbing, and blacksmiths' materials.....	83. 42	23. 97
Gas for Home buildings.....	216. 25	164. 00
Paints and oils used in general repairs.....	38. 91	93. 39
Materials used in general repairs, lumber, etc.....	56. 93	88. 39
Stationery used in governor's and treasurer's offices and Home library.....	96. 74	42. 20
Articles used for police purposes, tableware, etc., purchase of flags.....	131. 67	104. 09
Clothing for inmates.....	2, 013. 80	.....
Forage, oats, corn, and bran.....	138. 33	122. 71
Purchase of manure, farming implements, and articles for dairy.....	464. 30	20. 90
Bedding for inmates.....	237. 00	.....
Materials used in greenhouse and Home garden.....	19. 29	35. 95
Purchase of articles used in amusement room.....	13. 10	.....
Materials used in repairs to officers' quarters.....	13. 66	6. 08
Fuel for the Home.....	.....	85. 89
Articles for Home stables.....	.....	1. 75
Total	4, 018. 15	918. 44

RECAPITULATION OF EXPENDITURES.

Purchase of supplies, Abstract A.....	\$4, 018. 15	\$918. 44
Purchase of provisions, Abstract B.....	4, 666. 40	4, 187. 22
Services rendered, Abstract C.....	5, 098. 25	6, 160. 77
Pay of commuters, Abstract D.....	326. 00	5, 944. 33
Permanent improvements, Abstract E.....	6, 626. 67	156. 00
Total	20, 735. 47	17, 366. 76

RICH. C. PARKER,
Brevet Major, U. S. A., Secretary and Treasurer.

M.—Field return of the inmates of the United States Soldiers' Home January 29, 1895.

Present for duty:		Present:	
Governor.....	1	Temporarily admitted	74
Deputy governor.....	1	Invalided privates	95
Secretary and treasurer.....	1		
Surgeon.....	1	Total.....	717
Hospital steward.....	1	Aggregate	721
Sergeants	21	Absent:	
Corporals	6	On outdoor relief.....	322
Privates	302	Insane asylum.....	17
Sick—Privates.....	82	In confinement.....	1
Extra duty:		With leave:	
Noncommissioned officers.....	1	Privates	27
Privates	135	Suspended	3
		Present and absent:	
		Total.....	1,087
		Aggregate	1,091
On outdoor relief (beneficiaries).....			322
In insane asylum (inmates).....			17
On furlough (inmates).....			27
On suspension (inmates).....			3
In confinement (inmates).....			1
			370
Present distributed among the buildings as follows:			
Scott Building (with bedroom space of 271,990 cubic feet, equal to 1,259.25 cubic feet per man).....			216
Sherman Building (with bedroom space of 214,664 cubic feet, equal to 1,987.62 cubic feet per man).....			108
Sheridan Building (with bedroom space of 152,058 cubic feet, equal to 1,197.30 cubic feet per man).....			127
King Building (with bedroom space of 106,594 cubic feet, equal to 1,239.46 cubic feet per man).....			86
Anderson Building (with bedroom space of 55,874 cubic feet, equal to 1,299.39 cubic feet per man).....			43
North gatehouse			4
Eagle gatehouse			2
West gatehouse.....			1
Whitney avenue gatehouse			1
South gatehouse			1
Southeast gatehouse			1
Married men, old farmhouse			2
Married men who sleep outside.....			16
Hospital			110
Total inmates present.....			717
Total present and absent.....			
Permanent inmates present and absent.....			691
Temporary inmates present and absent.....			74
Beneficiaries receiving outdoor relief.....			322
Total.....			1,087

D. S. STANLEY,
Brigadier-General, Governor.

N.—Garden account of United States Soldiers' Home, District of Columbia, from November 1, 1893, to June 30, 1894.

DR.	
To labor, fertilizers, seeds, tools, fuel, and implements.....	\$2,469.53
CR.	
By 18,200 plants, trees, and shrubs raised in garden and greenhouse	997.00
By 73 cords of wood	100.50
Balance to debit of garden expended in improvements of grounds	1,363.03
Total	2,469.53

NOTE.—This department has the care of the ornamentation of the grounds, lawns, flowers, shrubs, trees, and fruit.

RICH. C. PARKER,
Brevet Major, U. S. A., Secretary and Treasurer.

O.—Dairy account, United States Soldiers' Home, from November 1, 1893, to June 30, 1894.

DR.	
To labor, forage, fuel, rations, and repairs.....	\$337. 93
CR.	
Balance to debit of dairy.....	337. 93
No dairy herd milk purchased.	
RICH. C. PARKER, Brevet Major, U. S. A., Secretary and Treasurer.	

P.—List of crockery ware used daily in United States Soldiers' Home mess hall from January 1 to December 31, 1894.

	Plates in use, break-fast and dinner.	Soup plates in use.	Total plates in use.	Bowls in use.	Butter plates in use.
Daily average (631).....	631	631	1, 262	631	83
Received from treasurer.....			312	420	48
Total.....			1, 574	1, 051	136
Broken plates.....					319
Broken bowls.....					495
Broken butter plates.....					39
Percentage, plates.....					20
Percentage, bowls.....					47
Percentage, butter plates.....					21. 3
Total percentage.....					31

D. A. IRWIN,
Captain, U. S. A., Deputy Governor.

Q.—List of contracts for supplies and services at the United States Soldiers' Home, September 30, 1894

Telephone service, Chesapeake and Potomac Telephone Company, metallic circuit, per annum.....	\$240. 00
Amick's gas regulators, People's Gas-Saving Association furnishes fire regulators and keeps same in proper order and furnishes the necessary burners for a good gaslight service, per month.....	20. 00
Fuel:	
White-ash furnace coal.....per ton..	4. 18
White-ash stove coal.....do....	4. 75
Cumberland coal.....do....	3. 21
Ice.....per 100 pounds..	. 29½
Forage.	
Oats.....do....	1. 31
Shelled corn.....do....	. 95
Flour.....per barrel..	3. 45
Beef, etc.:	
Fresh beef.....per pound..	. 0535
Corned beef.....do....	. 0275
Fresh mutton.....do....	. 0750
Fresh veal.....do....	. 0750
Laundry work:	
Per man (the laundered articles for each man per week consist of one sheet, one pillow-case, and one complete change of underclothing).....per month..	. 24½
Extra washing, as follows: Billiard-table covers, summer coats, trousers.....each..	. 10
Bedspreads, table covers, aprons, white caps.....do....	. 05
Roller towels.....do....	. 03
Hand towels, sheets.....do....	. 02
Pillowcases.....do....	. 01
Blankets, mattress covers.....do....	. 25
Napkins.....do....	. 00½
Milk.....per gallon..	. 13
Butterine.....per pound..	. 12
Groceries:	
Beans.....per bushel..	1. 70
Vinegar.....per gallon..	. 08
Candles.....per pound..	. 07½
Salt.....per sack..	. 95
"A" sugar.....per 100 pounds..	4. 95
"C" sugar.....do....	4. 28

Groceries—Continued.

Pepper	per pound..	\$0.00
Soap	do.....	.04
Sirup	per gallon..	.25
Bacon	per pound..	.09½
Ham	do.....	.11½
Pickled pork shoulders.....	do.....	.07½
Mackerel, No. 2, Irish.....	per barrel..	15.50
Rice	per pound..	.04½
Tea, green and black	do.....	.17
Green coffee	do.....	.17½
Roasted coffee	do.....	.19
Mustard (Coleman's)	do.....	.27½
Cheese	do.....	.11½
Clothing:		
Harvard ties.....	per pair..	.94
Black felt hats	each.....	.67½
Dark-blue sack coats	do.....	3.60
Dark-blue vests	do.....	1.34
Sky-blue trousers, extra large size	do.....	3.14
Flannel shirts.....	do.....	.67½
Canton-flannel drawers.....	do.....	.29½
Woolen stockings.....	per pair..	.16½
Woolen blankets.....	each.....	2.99
Bedspreads.....	do.....	1.92½
Pillowcases	do.....	.16
Roller towels	do.....	.63
Hand towels	per dozen..	2.19
Sky-blue trousers, purchased from Quartermaster's Department.....	per pair..	3.47
Stands for lockers (200) *.....	each.....	1.50
Digging and completing a well at First-street gate lodge*		136.00
Services repairing elevator at the hospital*		64.00
Iron bedsteads with iron mattress frames *.....	each.....	6.15
Hose couplings, used in connection with fire department system at the Home, and services of plumber*		243.17
Electrical communication between Home and pump house *.....		60.00
Cleaning down and pointing up stone work on Scott Building *.....		416.25

RICH. C. PARKER,
Brevet Major, U. S. A., Secretary and Treasurer.

R.—List of persons paid for services in more than one capacity, September 30, 1894, United States Soldiers' Home, District of Columbia.

No.	Names.	Services and compensation.
1	Evans, Thomas	\$30 per month as sergeant-major, and 30 cents per day as clerk.
2	Stauffer, Rudolph	\$12 per month as floor sergeant, King Building, and \$5 per month for charge of kitchen.
3	Pownall, Joseph	\$15 per month as band leader, and \$15 per month as first sergeant, Anderson Building.
4	Stevensen, Lafayette	\$12 per month as first-class musician, and \$8 as bugler.
5	Hasselfeldt, Charles	\$20 per month as clerk in governor's office, and \$5 per month for charge of tower clock.
6	Elwood, William	\$12 per month as floor sergeant, Scott Building, and \$5 per month as provost-sergeant, mounted.

RICH. C. PARKER,
Brevet Major, U. S. A., Secretary and Treasurer.

* Accepted bids; no formal contract executed.

S.—Statement showing the number of inmates present at the Home January 29, 1895, with length of army service; also the number of pensioners and rate of pension.

LENGTH OF ARMY SERVICE.

Length of service.	Num-ber of men.	Length of service.	Num-ber of men.	Length of service.	Num-ber of men.
4 months.....	1	9 years.....	19	23 years.....	41
7 months.....	2	10 years.....	14	24 years.....	24
8 months.....	2	11 years.....	10	25 years.....	26
9 months.....	3	12 years.....	14	26 years.....	19
10 months.....	1	13 years.....	16	27 years.....	8
11 months.....	1	14 years.....	15	28 years.....	5
1 year.....	26	15 years.....	16	29 years.....	3
2 years.....	27	16 years.....	15	30 years.....	3
3 years.....	31	17 years.....	11	34 years.....	1
4 years.....	19	18 years.....	23	35 years.....	1
5 years.....	32	19 years.....	31		
6 years.....	13	20 years.....	89	Total.....	717
7 years.....	15	21 years.....	72		
8 years.....	17	22 years.....	51		

PENSIONS.

Rate per month.	Num-ber of men.	Rate per month.	Num-ber of men.	Rate per month.	Num-ber of men.
\$2 per month.....	6	\$14 per month.....	33	\$24 per month.....	8
\$4 per month.....	26	\$15 per month.....	2	\$29 per month.....	1
\$6 per month.....	31	\$16 per month.....	31	\$30 per month.....	5
\$8 per month.....	93	\$17 per month.....	61	\$36 per month.....	1
\$10 per month.....	43	\$18 per month.....	1		
\$12 per month.....	188	\$20 per month.....	3	Total.....	535
\$12.50 per month.....	1	\$22 per month.....	1		

D. S. STANLEY,
Brigadier-General, Governor.

T.—Value of product, by items, of United States Soldiers' Home farm, during year ending September 30, 1894.

186½ bushels of beets.....	\$104.80
47½ bushels of beans, string.....	29.54
3,290 heads of cabbage.....	121.89
40½ bushels of carrots.....	26.78
10,510 stalks of celery.....	317.52
7½ bushels of cucumbers.....	4.59
750½ dozen ears of corn.....	73.70
482 pounds of horse radish.....	19.28
452 bushels of kale.....	135.60
4,423 heads of lettuce.....	80.71
8½ bushels of okra.....	3.62
4,571 bunches of onions.....	22.85
1,570 bunches of parsley.....	67.85
423½ bushels of parsnips.....	213.20
1,847 bushels of potatoes, white.....	1,051.20
166½ bushels of potatoes, sweet.....	83.25
8½ bushels of radishes.....	4.88
242½ bushels of salsify.....	216.75
180 bushels of spinach.....	36.03
5,162 pounds of squash.....	51.62
430½ bushels of turnips.....	98.70
310½ bushels of tomatoes.....	120.35
300 tons of hay.....	4,500.00
Total.....	*7,384.71

RICH. C. PARKER,
Brevet Major, U. S. A., Secretary and Treasurer.

* Farm products, excluding hay, \$2,884.71.

U.—Special diet for the week ending September 1, 1894, asked for by the patients or prescribed by the doctor.

	Breakfast.	Dinner.	Supper.
Ward A:			
Peltzer	2 fried eggs, milk	Boiled ham, milk	Chocolate, toast, milk.
Prout	Chicken jelly, milk	Chicken jelly, milk	Chicken jelly, milk.
O'Keefe	Fried ham and potatoes .....	.....	.....
Harrison .....	.....	Milk .....	.....
Ward B:			
Jones	Eggs on toast	Chicken soup	2 soft-boiled eggs.
Foxman	Milk toast	Boiled rice and milk	Butter toast.
Ward D:			
Johnson, 1st.	2 soft-boiled eggs, steak .....	.....	2 soft-boiled eggs, steak.
Johnson, 2d.	2 soft-boiled eggs, milk toast.	Custard, milk	2 soft-boiled eggs.
Hickey	Beefsteak, rare; milk .....	.....	.....
Uhlig	Milk	Milk	Milk.
Ward E:			
Deere	2 fried eggs, milk	do	2 fried eggs, milk.
Gordon	2 soft-boiled eggs	2 soft-boiled eggs	2 soft-boiled eggs.
Muller .....	.....	Milk .....	.....
Ward F:			
Bowker .....	.....	do	Milk.

Subject to daily changes.

On hand August 26:

Kitchen—	
Milk	gallons.. 15
Mutton	pounds.. 95
Peas, green dried	do... 10
Bread	do... 6
Soap	do... 4
Dining room—	
Bread	do... 38
Butter	do... 8
Coffee cake	sheets.. 9
Pearline	packages.. 1

On hand August 27:

Kitchen—	
Milk	gallons.. 15
Beef	pounds.. 147
Cabbage	heads.. 80
Macaroni	paper.. 1
Bread	pounds.. 6
Pearline	paper.. 1
Sapolio	cakes.. 2
Dining room—	
Bread	pounds.. 50
Butter	do... 9
Cheese	do... 12
Soap	do... 2
Wards, etc.—	
"Disp" soap	do... 2
Pearline	package.. 1

On hand August 28:

Kitchen—	
Milk	gallons.. 15
Corn beef	pounds.. 100
Chocolate	do... 1
Beets	bushels.. 1
Bread	pounds.. 4
Soap	do... 2
Dining room—	
Bread	do... 48
Butter	do... 4

On hand August 29:

Kitchen—	
Milk	gallons.. 15
Beef	pounds.. 92
Liver	do... 35
String beans	bushels.. 2
Bread	pounds.. 4
Dining room—	
Bread	do... 50
Butter	do... 10
Soap	do... 2

On hand August 30:

Kitchen—	
Milk	gallons.. 15
Beef	pounds.. 101
Macaroni	do... 8
Cheese	do... 4
Apples, evaporated	do... 50
Raisins	do... 10
Currants	do... 10
Barley	do... 10
Butter	do... 11
Potatoes	bushels.. 4
Eggs	dozen.. 30
Bread	pounds.. 6
Soap	do... 2
Dining room—	
Bread	do... 56
Butter	do... 10
Ward, etc.—	
Ward C, blacking	1
Sapolio	cake.. 1

On hand August 31:

Kitchen—	
Milk	gallons.. 15
Cod, fresh	pounds.. 80
Tapioca	do... 6
Lemons	number.. 3
Gelatin	package.. 1
Chicken	number.. 1
Bread	pounds.. 4
Sapolio	packages.. 2
Dining room—	
Bread	pounds.. 54
Butter	do... 9
Ward, etc.—	
Ward E, sapolio	package.. 1
A, pearline	do... 1
C, putz pomade	box.. 1

On hand September 1:

Kitchen—	
Milk	gallons.. 15
Beef	pounds.. 89
Bacon	do... 50
Corn, green	number.. 200
Vinegar	gallon.. 1
Bread	pounds.. 14
Soap	do... 2
Dining room—	
Bread	pounds.. 50
Butter	do... 8
Soap	do... 2

Received, issued, and remaining on hand August 20 to September 1, 1894.

Received:		Received—Continued.	
Fresh beef.....	pounds.. 711	Cabbage.....	head.. 140
Mutton.....	do.... 92	String beans.....	bushels.. 2
Veal.....	do.... 100	Beets.....	do.... 2
Corn beef.....	do.... 204	Watermelons.....	number.. 45
Sausages.....	do.... 45	On hand:	
Fresh fish.....	do.... 155	Fresh beef.....	pounds.. 182
Eggs.....	dozen.. 60	Veal.....	do.... 100
Chickens.....	number.. 3	Eggs.....	dozen.. 9
Sugar.....	pounds.. 200	Chicken.....	number.. 1
Coffee.....	do.... 90	Sugar.....	pounds.. 43
Tea.....	do.... 10	Coffee.....	do.... 18
Bacon.....	do.... 50	Tea.....	do.... 14
Soap.....	do.... 60	Soap.....	do.... 23
Salt.....	do.... 50	Salt.....	do.... 28
Butter.....	do.... 120	Butter.....	do.... 42
Bread.....	do.... 630	Bread.....	do.... 60
Cake, coffee.....	sheets.. 9	Milk.....	gallons.. 14
Milk.....	gallons.. 165	Potatoes.....	bushels.. 6
Potatoes.....	bushels.. 15	Beets.....	do.... 2

Requisition for stores and supplies for use of hospital during August, 1894.

Blacking, shoe.....	boxes.. 12	Lye, R. S.....	cans.. 6
Blacking, shoe brushes.....	number.. 2	Macaroni.....	pounds.. 36
Beans, lima.....	cans.. 12	Matches, safety.....	gross.. 14
Beer, Faust.....	dozen.. 12	Onions.....	bushels.. 4
Cheese.....	pounds.. 75	Pickles, C. & B.....	bottles.. 2
Cornstarch.....	do.... 6	Prunes.....	pounds.. 100
Chickens.....	do.... 30	Pease, dried.....	do.... 60
Chocolate.....	do.... 6	Pease, green.....	cans.. 12
Codfish, salt.....	do.... 100	Pearline.....	packages.. 48
Dublin stout.....	dozen.. 2	Putz pomade.....	boxes.. 6
Eggs.....	do.... 150	Raisins.....	pounds.. 10
Fish, fresh.....	pounds.. 320	Currants.....	do.... 10
Gelatin.....	packages.. 6	Sausages, assorted.....	do.... 70
Hams.....	pounds.. 250	Sapolio.....	cakes.. 36
Harness dressing.....	cans.. 1	Sugar, granulated.....	pounds.. 50
Lard.....	pounds.. 5	Shoulders, pickled.....	do.... 250
Lemons, fresh.....	dozen.. 6	Worcester sauce.....	pints.. 2

FULL DIET FOR THE WEEK ENDING SEPTEMBER 1, 1894.

Sunday.—Breakfast: Boiled ham, fried potatoes, butter, bread, coffee. Dinner: Roast mutton, gravy, baked sweet potatoes, bread pudding, bread, coffee. Supper: Cake, butter, bread, coffee.

Monday.—Breakfast: Fried potatoes, fried bacon, butter, bread, coffee. Dinner: Tomato soup, roast beef, gravy, pease, green corn, bread. Supper: Cheese and crackers, butter, bread, tea.

Tuesday.—Breakfast: Irishstew, butter, bread, coffee. Dinner: Corned beef and cabbage, potatoes, pickles, bread, coffee. Supper: Cold corned beef, butter, bread, tea.

Wednesday.—Breakfast: Stewed beef, gravy, stewed onions, butter, bread, coffee. Dinner: Vegetable soup, roast beef, gravy, potatoes, tomatoes, bread. Supper: Boiled rice and milk, butter, sirup, bread, tea.

Thursday.—Breakfast: Fried liver, fried potatoes, butter, bread, coffee. Dinner: Roast veal, gravy, potatoes, cold slaw, bread, coffee. Supper: Macaroni and cheese, butter, bread, tea.

Friday.—Breakfast: Baked codfish hash, butter, bread, coffee. Dinner: Fresh fish baked, sauce, mashed potatoes, tapioca pudding, bread, coffee. Supper: Stewed apples, butter, bread, tea.

Saturday.—Breakfast: Stew, butter, bread, coffee. Dinner: Bean soup, roast beef, gravy, potatoes, tomatoes, bread. Supper: Cold meat, butter, bread, tea.

HOSPITAL MESS.

Ration return for 11 days, from the 20th to the 31st of August, 1894.

Required:	
Sugar.....	pounds.. 200
Coffee.....	do.... 90
Tea.....	do.... 10
Bacon.....	do.... 50
Beans.....	do.... 50
Rice.....	do.... 50
Soap.....	do.... 60
Salt.....	do.... 50
Butter.....	do.... 120
Clinical assistant.....	1
Hospital matron.....	1
Ambulance driver.....	1
Employees.....	29
Patients.....	68
Total.....	100

V.—List of medicines on hand September 30, 1894, and six months' supply received October 5, 1894, at hospital, United States Soldiers' Home.

Aggregate number present (all invalids).....	734
Average in hospital.....	76
Average at sick call.....	8

Articles.	On hand.	Re-ceived.	Articles.	On hand.	Re-ceived.
Acacia, gum.....pounds..	4		Cardamom seed, powdered, pounds.....		2
Acacia, powdered.....do....		25	Catechu.....pounds..	4	1
Acid:			Calcium, phosph. precip...do....	1	2
Acetic.....do....	5		Campho-phenique.....bottles..	4	
Benzoic.....ounces..	1		Cerate:		
Boracic.....pounds..	1		Cantharides.....pounds..	1	
Carbolic, pure.....do....	3	3	Re-in.....do....	1	
Carbolic, common..gallons..	50		Chloranodyne.....ounces..	6	
Citric.....pounds..	1		Chloralamid.....do....	4	
Gallic.....ounces..	2		Chloroform.....pounds..	4	
Hydrocyanic, dil.....do....	3		Chrysarobin.....ounces..	1	
Hydrochloric.....pounds..	2		Chloral hydrate.....do....	8	
Nitric, C. P.....ounces..	4	16	Cinchona.....pounds..	3	
Nitric, commercial.pounds..	1	5	Cocaine, hydrochlorate.ounces..		1
Oleic.....do....	1		Cocaine, tablets.....bottles..		1
Oxalic.....do....	1	1	Colchicum seed.....pounds..	1	1
Phosphoric, dil.....ounces..	8		Collodion, flexible.....ounces..	7	6
Salicylic.....do....	8		Copper, sulphate.....do....	4	
Sulphuric, C. P.....do....	1	16	Creosote, beechwood...pounds..	4	2
Tartaric.....pounds..	5		Digitalis leaves.....do....		1
Tannic.....ounces..	12		Diuretine.....ounces..	1	
Aconite root, powdered...do....		1	Elixir purgans.....bottle..	6	
Alcohol.....gallons..	5		Ether:		
Aloes.....ounces..	1		Fortior.....pounds..	4	5
Ammoniac, gum.....do....	16		Spirits, compound.....do....	1	1
Ammonia:			Spirits, nitrous.....do....	1	5
Aromatic spirits.....do....	16		Encalyptol.....ounces..	1	
Bromide.....do....	16		Extract:		
Carbonate.....do....	12		Belladonna.....do....	1	
Chloride.....do....	32		Buchu, fluid.....do....	8	
Salicylate.....do....	12		Cascara sagrada, fluid..lbs..	3	
Water of.....pounds..	8	20	Cactus, fluid.....do....	1	
Valerianate.....ounces..	1		Convallaria fluid.....do....	2	
Amyl:			Corn silk, fluid.....do....	1	
Nitrite.....do....	3		Dog grass, fluid.....do....	1	
Nitrite, pearls.....dozen..	1		Ergot, fluid.....do....	1	
Antifebrine.....ounces..	1		Ginger, fluid.....do....	1	
Antikamnia.....do....	3		Grindelia, fluid.....do....	2	
Antipyrine.....do....	2	3	Guarana, fluid.....do....	1	
Aristol.....do....	1		Hydrastis, fluid.....do....	1	1
Arnica flowers.....pounds..	4	5	Ipecac., fluid.....do....	1	
Arsenite of pot. sol.....do....	1		Licorice.....do....	4	
Atropia, sulphate.....ounces..	1		Licorice, fluid.....do....	1	1
Bark, wild cherry, powdered, pounds.....	2	25	Licorice, powdered...do....	1	
Bismuth, subnitrate....pounds..	5		Nux vomica.....ounces..	2	
Bloodroot, powdered.....do....	3		Opium, aq.....do....	1	
Champhor, gum.....do....	4	5	Physostigma.....do....	1	
Capsules.....boxes..	10		Quebracho, fluid.....do....	8	

V.—List of medicines on hand September 30, 1894, etc.—Continued.

Articles.	On hand.	Re- ceived.	Articles.	On hand.	Re- ceived.
Extract—Continued.			Pills—Continued.		
Sarsaparilla, fluid... pounds..	1	2	Dover's powder... number..		500
Senega, fluid... do....	1		Manganese binoxide... do....		500
Senna, fluid... do....	1		Quinia, sulphate, 2 grains, number	300	
Spigelia, fluid... do....	1		Quinia, sulphate, 3 grains, number	2,000	
Stramonium... do....	1		Potassa:		
Taraxacum, fluid... do....	3		Acetate... pounds..	1	
Uva ursi, fluid... do....	1		Caustic... ounces..		4
Flaxseed... do....	4		Chlorate... pounds..	4	
Flaxseed meal... do....	40	50	Citrate... ounces..	8	
Formalin... do....	1		Cyanide... do....	1	
Gentian, powdered... do....		1	Bicarbonate... pounds..	1	
Glycerin... do....		10	Bichromate... do....	4	
Glycozone... bottles..	8		Bitartrate... do....	1	2
Glycyrrhiza, co. powder... lbs..	1	5	Iodide... do....		25
Guaiac, resin... do....		1	Nitrate... do....	2	3
Hypnal... ounces..	1		Permanganate... do....	1	
Hydrogen, peroxide... bottles..	9		Plaster paris... do....	15	
Iodine... ounces..		4	Plaster:		
Iodoform... pounds..	4		Adhesive... spools..	8	24
Ipecac and opium powder... do....	2		Belladonna... yards..	5	10
Iron:			Lead... pounds..	4	
Citrate, and quinia... do....	1		Porous... number..	200	500
Dialysed... do....	1		Quinia, sulphate... ounces..	10	10
Pyrophosphate... do....	2		Resorcin... do....	1	
Reduced... ounces..	2		Rhubarb:		
Tersulphate, solution... lbs..	12		Powdered... do....	16	
Sirup, iodide of... do....	2		Powdered, compound... do....	4	
Lanolin... do....	3		Root... do....	12	
Lactopeptine... ounces..		2	Rochelle salts... pounds..	5	15
Lead, acetate... pounds..	1		Salicin... ounces..	2	
Licorice root, powdered... do....	1		Santonin... do....	1	
Listerine... bottles..	2		Silver, nitrate... do....	2	
Lithia, carbonate... ounces..	2		Silver, nitrate, fused... do....	2	
Lycopodium... do....	8		Snakeroot... pounds..	1	
Magnesia:			Soap, castile... cakes..	6	48
Carbonate... pounds..	2		Soda:		
Sulphate... do....	15	20	Benzoate... ounces..	8	
Mercury:			Bicarbonate... pounds..	3	15
Bichloride... do....	4		Borate... do....	3	
Mild chloride... do....	1		Bromide... do....	1	
Metallic... do....	1		Chlorinated, sol... bottles..	12	
Ointment, nitrate... do....	2		Phosphate... pounds..	2	
Oleate... do....	1		Salicylate... do....	3	5
Pill mass... do....	1		Sulphate... do....	20	
Red oxide... ounces..	1		Sulphite... do....	1	
Red iodide... do....	1		Stramonium... do....		2
With chalk... do....	8		Strychnia, sulphate... ounces..	1	
Morphia:			Sugar of milk... pounds..	1	
Sulphate... do....	1		Sulfonal... ounces..	2	3
Acetate... do....	1		Sulphur:		
Naphthalin... do....	12		Washed... pounds..	1	
Oil:			Roll... do....	20	
Anise... do....	1		Suppositories, hollow... gross..	1	
Cassia... do....	4		Tartar emetic... ounces..	1	
Cedar... do....	8		Tar, wood... pounds..	1	
Cloves... do....	1		Therapol... ounces..	6	
Croton... do....	2		Tincture:		
Hemlock... do....	8		Belladonna... do....	20	
Lemon... do....		8	Cantharidis... do....	1	
Malefern... do....	1		Chloride of iron... do....	36	
Orange... do....	1	2	Cimicifuga... do....	16	
Peppermint... do....	4		Guaiac, ammoniated... do....	16	
Rosemary... do....	1	8	Opium... do....	80	
Spearmint... do....		2	Opium, camphorated... do....	40	
Wintergreen... do....	3		Sanguinaria... do....	30	
Castor... gallons..	1	5	Serpentaria... do....	16	
Cod liver... do....		10	Veratrum viride... do....	4	
Cotton seed... do....	1	5	Trikresol... do....	28	
Turpentine... do....		50	Wax:		
Opium, powdered... pounds..	1		White... pounds..	1	
Papain... ounces..	1		Yellow... do....		20
Paraffin... do....	2	16	Whisky, rye... bottles..	3	36
Pepsin... do....	4		Wine, sherry... do....		4
Peru, balsam... do....	16		Zinc:		
Petrolatum... pounds..	5	20	Acetate... ounces..	4	
Phenacetin... ounces..	2		Chlorinated, sol... bottles..	2	
Pills:			Oleate... pounds..	1	
Anticonstipation... number..	200	5,000	Oxide... do....	1	
Asafetida... do....	400		Sulphate... do....	1	
Camphor and opium... do....	400				
Cathartic, compound... do....	800				

**REPORT OF BOARD OF VISITORS TO WEST POINT
MILITARY ACADEMY.**

The following resolution was adopted June 4, 1894:

“Resolved, That the Board of Visitors make a single report, in triplicate, of their proceedings, recommendations, etc., one copy, properly signed, to be submitted each to the Speaker of the House of Representatives, the presiding officer of the Senate, and to the Secretary of War.”

REPORT

OF THE

BOARD OF VISITORS

TO THE

UNITED STATES MILITARY ACADEMY

FOR THE YEAR 1894.

The Board of Visitors to the United States Military Academy for the year 1894 assembled at West Point on the 1st of June, with every member present, as follows:

APPOINTED BY THE PRESIDENT OF THE UNITED STATES.

1. Rev. ALEXANDER MACKAY-SMITH, D. D Washington, D. C.
2. Hon. GEORGE H. CRAIG Selma, Ala.
3. Dr. WILLIAM W. KEEN Philadelphia, Pa.
4. Hon. JOHN D. CRIMMINS New York, N. Y.
5. Col. THOMAS F. EDMANDS Boston, Mass.
6. Mr. JOHN J. DAVIS Clarksburg, W. Va.
7. Hon. EDWARD C. WALL Milwaukee, Wis.

APPOINTED BY THE PRESIDENT OF THE SENATE.

8. Hon. WILLIAM B. BATE Nashville, Tenn.
9. Hon. REDFIELD PROCTOR Proctor, Vt.

APPOINTED BY THE SPEAKER OF THE HOUSE OF REPRESENTATIVES.

10. Hon. JOHN C. BLACK Chicago, Ill.
11. Hon. WILLIAM H. HATCH Hannibal, Mo.
12. Hon. NEWTON M. CURTIS Ogdensburg, N. Y.

The organization of the Board was as follows:

- | | |
|-----------------------------|-----------------|
| Hon. WILLIAM B. BATE..... | President. |
| Hon. NEWTON M. CURTIS | Vice-President. |
| Hon. EDWARD C. WALL..... | Secretary. |

Immediately upon receipt of notification of the organization of the Board, the Superintendent of the Academy, Col. Oswald H. Ernst, Corps of Engineers, U. S. A., expressed by letter his readiness to afford every facility for a thorough inspection of the workings of all the

departments of the Academy and in general to do everything possible to assist the Board in its labors, and at 4.20 p. m. the Superintendent, accompanied by the academic board, associate professors, and military staff, called officially upon the Board at the hotel, and under their escort, and with the customary salute of seventeen guns, the Board proceeded to attend a review of the Corps of Cadets and later a reception at the quarters of the Superintendent, where it had the pleasure of meeting the officers and ladies of the post and the prominent citizens of the neighborhood.

In order to facilitate business and make the investigations as thorough as possible, the Board was subdivided into the following committees:

(1) *Appointments and examinations*.—Rev. Alexander Mackay-Smith, D. D., chairman; Gen. John C. Black, Hon. John J. Davis.

(2) *Discipline and instruction*.—Hon. George H. Craig, chairman; Dr. William W. Keen, Gen. Newton M. Curtis.

(3) *Armament and equipment*.—Col. Thomas F. Edmands, chairman; Col. William H. Hatch, Gen. William B. Bate.

(4) *Buildings, grounds, and lights*.—Gen. Redfield Proctor, chairman; Rev. Alexander Mackay-Smith, D. D., Hon. Edward C. Wall.

(5) *Supplies and expenditures (for cadets)*.—Col. William H. Hatch, chairman; Hon. John D. Crimmins, Col. Thomas F. Edmands.

(6) *Fiscal affairs*.—Hon. John D. Crimmins, chairman; Gen. Redfield Proctor, Hon. George H. Craig.

(7) *Hygiene and athletics*.—Dr. William W. Keen, chairman; Gen. John C. Black, Hon. John J. Davis.

(8) *Miscellaneous*.—Hon. John J. Davis, chairman; Gen. Newton M. Curtis, Col. Thomas F. Edmands.

While to these committees was intrusted the duty of making a special study of the subjects enumerated, the Board proceeded from day to day to attend the examinations and witness the various military evolutions of the cadets. It was deeply impressed with the absolute fairness and thoroughness of the examinations, while the military evolutions of every character were admirably conducted. The reports of the various committees enter fully into all matters of detail, and to these the Board begs to invite special attention. It is the purpose of this, the report of the Board as a whole, to deal with matters of more general interest.

The recommendations of General Washington in 1796 have lost none of their pertinence of application during the past century. He said that—

The institution of a military academy is also recommended by cogent reasons. However pacific the general policy of a nation may be, it ought never to be without an adequate stock of military knowledge for emergencies. The first would impair the energy of its character and both hazard its safety and expose it to great evils when war could not be avoided. Besides that, war might not often depend upon its own choice. In proportion as the observance of pacific maxims might exempt a

nation from the necessity of practicing rules of military art, ought to be the case in preserving and transmitting, by proper establishments, the knowledge of that art. Whatever arguments may be drawn from particular examples, superficially received, a thorough examination of the subject will evince that the art of war is at once comprehensive and complicated, that it demands much previous study, and that the possession of it in its most approved and perfect state is of great moment to the security of a nation.

The lesson taught by the Franco-Prussian and Austro-Prussian wars illustrated, nearly a hundred years later, the wisdom of these suggestions of "the Father of his Country," as well as emphasized the wide difference between a knowledge of the art of war in its "most improved and perfect state" and an absolute system of military tactics and precedents. Germany, having recognized the modern system of the art of war to be one of engineering and concentration, triumphed alike over Austria and over France, and made patent to the world the value of military instruction to her whole people. A dispassionate review of the great movements and battles between the armies of this country during the late war between the States can not fail to emphasize the value and usefulness of military instruction given at the Military Academy, as well as by those military institutes of the States. While the extraordinary aptitude of our people for military duty was wonderfully illustrated in the late war, and while many officers wholly without previous military instruction made most remarkable and honorable careers in the leadership of large bodies of men, yet it is a well-recognized fact that the indomitable energy and undaunted courage of Grant and the genius and tactics of Lee, the maneuvers and skill of Johnston, and the persistency and dash of Sherman were in each case directed by the instruction received in their earlier years at West Point as much as by the experience obtained in the Mexican war, where again the value of the Military Academy was accentuated by the skill and information of her young graduates.

While military instruction in its widest scope is the primary object for which the Military Academy was established, yet in the opinion of this Board, as well as in the recommendations of previous boards, the widening of the educational advantages to be derived at West Point would be of inestimable value to the country. The practical value of the Military Academy at West Point to the country should not be confined to a training school for fifty or sixty young lieutenants, to be graduated annually, if its advantages of higher education can be extended, without material increase of expense, to a larger number of young men than can be provided with appointments in the Army each year. When General Grant expressed the opinion that the number of cadets should be increased to "one thousand" it was expected by him that an annual selection would be made of those required for the Army, and that the remainder of those graduating each year would return to civil life, where their scientific attainments would aid in the development of the country, and their military training be always at the call

of the authorities in time of need. However pacific may be the theoretic policy of this country, the fact remains that about one-sixth of its past existence as a nation has been spent in a state of war; and in that period of strife no consideration has been taken of periods of riot and insurrection, from the whisky rebellion to the Pullman troubles, during which many millions of dollars of property was destroyed and many valuable lives sacrificed to the imaginary pacific policy of the best fighting people on earth.

That "well regulated militia" which the Constitution names as "necessary to the security of a free State" has never fulfilled the expectations of the fathers. That form of military organization brought disappointment upon the country in the war of 1812-1815, and this may be considered as one of the reasons why the militia has never been "regulated," either by Congress or the States. In its place have risen that chief defense of the country, the great volunteer organizations of the States, in which much just pride is taken in nearly every State. Its thorough organization, development, and instruction requires the aid and information of efficiently trained officers.

It is not altogether impossible that the exigencies of government, both State and Federal, in this country, extending from ocean to ocean, covering nearly a continent and peopled with almost 70,000,000, many of whom are new comers and ignorant of liberty restrained by law, may yet demand an enlargement of the Army, or a more efficient organization of the volunteer system of the States.

However much our isolated position among the great military nations of the world may suggest a long period of peace, there have been repeated domestic experiences of which we should not lose sight and which indicate that the arm of local authority needs strengthening and support as well in a republic as in a despotism. We may shut our eyes and proclaim that ours is a pacific mission; that commerce and trade will win battles, and industry and enterprise gain us the victory—the best guaranty, however, is to prepare for war in times of peace. Hence, in the opinion of this Board, the Military Academy ought to be opened to a much larger number of young men for military education and training than at present it receives.

This Board does not suggest any considerable increase of appropriations for that enlargement, but it does most earnestly recommend the full and complete utilization of the plant already in existence by the increase of the number of cadets to 469—1 for each Senator, 1 for each Representative in Congress, and 20 for the President; or 361 to be nominated by members of the House, 88 to be nominated by the Senators, and 20 appointed by the President. The same ratio to be observed as the Senate and House of Representatives increase in members. The pay and current expenses of 469 cadets at \$540 each, the present annual cost, would amount to \$253,260. A table in the report of the Board for 1888 (p. 46) shows that the amount expended for pay and

current expenses averages \$258,635.50. There is manifestly a waste of money when 250 young men are educated for about the same amount that would educate 469 cadets through their military training. Inasmuch as a full corps of professors are paid just the same for a few as for many students, and all grounds, buildings, and appurtenances, as well as every necessary apparatus are at hand for the increased number now recommended, it will be wise economy therefore to keep that number present for duty as far as practicable.

In this recommendation the Board is sustained by the recommendations of the Boards which have preceded it for several years. That of 1888 considered "that it would be an act of sound policy to give the President the authority to appoint 10 cadets each year, not only as a means of maintaining the strength of the corps, but also for providing for many deserving young men who can in no other way secure admittance to the Academy." The Board for 1887 "renewed the recommendations made by the Board of Visitors last year, and recommends the revival of the law whereby the President was authorized to appoint at large 10 cadets annually." The same recommendations were made by the Board of 1889, while the Board of 1891, with emphasis, recommended the passage of an act fixing the strength of the corps of cadets at a maximum of 469. The same recommendation as to increase was made by the Board of 1892, which found, after a careful examination, that "the capacity of the Academy is able to accommodate about 500 cadets," but as that number would require additional expenditures, the Board further found, "on investigation, that a corps of 400 young men can be maintained and instructed with no further expense for buildings, nor the employment of other instructors. This being the case, there is a shortage of about 150 cadets—that is, the plant is ample to instruct 400 men instead of 250. In the opinion of your committee," says that report, "it would be wise policy to keep the corps up to its full working capacity, or as near thereto as it possibly can without increasing the number of professors or making additional expenditures for officers' quarters." And the Board of 1893 "renewed the recommendations of previous Boards of Visitors that the requirements for admission be raised, and that the number of cadets be gradually increased. We regard it as a pity that the largest possible number of youth should not share the advantages of the admirable plant, education, and training which West Point affords."

These recommendations, coming so repeatedly to Congress from Boards of Visitors organized under laws which required them to give "their views and recommendations concerning the Academy," ought to have received more consideration and attention than have heretofore been given to them. These Boards have discharged their "duty" under the law of their appointment without having been able to effect the apparent purpose of their appointment. Yet, notwithstanding this,

this Board now recommends an amendment to section 1315 of the Revised Statutes, so as to read substantially as follows:

SECTION 1315. The corps of cadets shall consist of two cadets from each State at large, one cadet from each Congressional district, one from each Territory, one from the District of Columbia, and twenty from the United States at large. They (the last named) shall be appointed by the President; those from the States at large, as nominations by the Senators; those from the Congressional districts, as nominations by the Representative from each district; those from the Territories, as nominations by the Delegates; and shall, with the exception of the twenty at large, be actual residents, for a period of two years preceding appointment, of the States, districts, Territories, and the District of Columbia, respectively, from which they purport to be appointed.

Under the Revised Statutes authority is vested in the Secretary of War to make regulations for carrying into effect all laws regulating the appointment of cadets.

The Board recommends that the paragraph relating to "alternates" be changed so as to provide, in the language of the subcommittee on appointments and examinations—

That each official possessing the nominating power select three young men, by forms sent out from the War Department, as Nos. 1, 2, and 3, to appear before the examining board. If No. 1 should fail, then No. 2 shall have a chance; if No. 2 shall fail, then No. 3 shall have a chance. It is suggested also that when failure occurs at the end of an annual examination, or by dismissal or resignation or death at any other time, that the vacancy then occurring be reported to the nominating person within ten days thereafter, and that he be requested to name and send his nominees before the examining board of the nearest post within thirty days, and upon failure to do so the President shall forthwith appoint from the district or State at large to which the vacancy attaches.

From this important subject, which, as has been shown, other Boards of Visitors have expressed substantially the same opinion, we pass to the consideration of subjects brought to our attention at the late visit to West Point.

The system in vogue at West Point is the essence of years of experience, and is not to be lightly criticised. Every energy is concentrated in the effort to mold the material presented to the officers of the Academy into finished, accomplished, and disciplined soldiers, men who in their turn must be ready to lead, to instruct, or command. To this end the cadet is from the very outset subject to a course of rigorous discipline, coupled with physical and mental training that requires his entire time and attention. These exactions continue almost without intermission during the four years' course. Many find it impossible to keep up to the required standard and are inexorably discharged, but those who endure to the end have earned, in addition to life employment in an honorable profession, a mental and physical development and an admirable scientific education.

The Board attended the examinations of every class in almost every branch of study. Its commendations would be too numerous to record. Its criticism is an old story, so old and so often made by previous Boards that it is strange that no organized effort has been made to overcome the fault. The halting English—the lack of facility of expression on the part of many of the cadets—is something painfully apparent, and points unerringly to the need of much greater instruction in the use of our mother tongue. The Board invites special attention to the recommendation under this head. It has nothing but praise for the theoretical instruction in every other respect.

Once out of the recitation room and in the ranks, however, the corps of cadets sprang beyond the bounds of criticism. In all their evolutions as infantry, cavalry, or artillery, the same precision, coupled with inimitable sense and grace, distinguished every exhibition, and while deeply impressed with the excellence of one and all, showing conclusively how thorough and intelligent has been their training, and how worthy their response, the Board must emphasize its admiration of the schools of physical culture and horsemanship. The result attained after one year in the gymnasium under Mr. Koehler, and three in the riding hall under Captain Craig, can hardly be equaled elsewhere. It is his remarkable efficiency in this most important branch of instruction that has led superintendent after superintendent, officers by the score, and every Board of Visitors since 1888, to urge upon Congress the propriety of rewarding Mr. Koehler with military rank, even if in only a subordinate grade.

The administration of the Superintendent, his staff officers and assistants, meets and merits the highest praise of the Board. But while the grounds and buildings, instruction and discipline, bearing and conduct of the officers and cadets, all command the admiration of the Board, it is compelled to express its surprise and disappointment that at this, the only military post in the United States whose band is paid by the Government, the martial music should be so utterly inadequate. Time was when the West Point band was fairly representative of the Academy and of the nation, but ever since Congress, by the act of 1877, cut it down to a leader and twenty-four men, with a pittance for pay, it has gradually dwindled to its present condition, with the result that the élite battalion of the Army, the show spot of America, the center of attraction for hundreds of visiting officers from abroad and thousands of our fellow-citizens at home, can be afforded only an indifferent band. The officers in charge do the best in their power with the means at hand, but musicians worthy of the name will not enlist or stay at West Point on such wages.

On Thursday, June 7, the Academy was visited by the Hon. Daniel S. Lamont, Secretary of War, upon whom, as a body, the Board called and paid its respects on the evening of his arrival. On Tuesday, June

12, the Board, in a body, attended the graduating exercises, on which occasion the annual address to the corps of cadets was delivered by the Hon. John C. Black, of the Board, and the diplomas were presented to the graduating class by Brig. Gen. George D. Ruggles, Adjutant-General of the Army. Then, having designated Col. Thomas F. Edmands to remain until after the admission of the new class, in his official capacity as a member of the Board to observe the proceedings and report thereon, and having, by letter to the Superintendent, expressed its thanks for the unvarying courtesies extended by him and all his subordinates, and its high commendation of the fidelity and ability with which they administered the affairs of the institution, upon which the efficiency of the Army in a great measure depends, the Board adjourned sine die.

Its recommendations are as follows:

1. Concurring with some of its predecessors, the Board recommends the reappointment each year of two or more members of the previous Board. This recommendation is made in the sincere belief that its adoption will result in largely facilitating the transaction of business and in increasing the influence and usefulness of the Board as an inspecting and advisory body. In this connection it is suggested that in order to compare the Military Academy at West Point with other similar institutions, the Secretary of War furnish the next Board and the following Boards of Visitors with a brief but sufficiently full résumé of the conditions for admission and the course of study in American semimilitary institutions and at the Naval Academy at Annapolis, and especially in the national schools of instruction in military and naval training in Great Britain, France, Germany, Austria, Italy, and Russia, together with any other data of importance pertaining to this subject. This would enable the Board to form much more correct comparisons between West Point and other schools.

The following recommendations, originating in the committees, are unanimously adopted by the Board:

First. A change in the present law of appointment, so as to give each United States Senator the same privilege of nomination to the Academy each year as that possessed by the members of the House of Representatives, as well as to restore to the President the power formerly exercised of nominating ten candidates annually at large.

Second. That each official possessing the nominating power select three young men, by forms sent out from the War Department, as Nos. 1, 2, 3, etc., to appear before the examining board. If No. 1 should fail, No. 2 will then have a chance; if No. 2 fail, then No. 3. It is suggested also that when failure occurs at the end of any annual examination, that this failure be reported to the Congressman or nominating officer within ten days, and that he be requested to name and send his

man before the examining board of the nearest post for examination within thirty days.

Third. A fuller English course, even at the expense of some of the 2,007 hours given to mathematics or some other study, or, better, by raising the requirements for admission.

Fourth. Raising the standard of admission to include all of geography and plane geometry, and a considerable part of algebra, if not all of it.

Fifth. Leave of absence, say once in seven years, in turn to each member of the academic board on full pay for six months or a year, with a view to the study of their respective departments by visiting allied institutions in this country and abroad.

Sixth. Restricting the duties of the chaplain to those of his profession.

Seventh. The immediate purchase of the articles enumerated in the report of the committee on armament and equipment; also of fifty cavalry horses, to be used exclusively for cavalry purposes.

Eighth. That the rank of first lieutenant of infantry be conferred upon Mr. Koehler, sword master and instructor in gymnastics, while so acting.

Ninth. That twenty-eight men of the cavalry detachment, while acting as artillery drivers, shall receive extra pay.

Tenth. An appropriation of \$40,000 for five sets of officers' quarters, costing \$8,000 each, and an appropriation of \$17,000, in addition to any former appropriation, for completing the reservoir; also at some future time, and as soon as practicable, an appropriation of \$35,000 for the erection of a tower on the academic building.

Eleventh. The kitchen of the cadets' mess hall should be enlarged, and the floor of the mess hall, now of wood, should be of tile or of stone mosaic laid in cement.

Twelfth. That the area wall of the cadet mess hall or Grant Hall be rebuilt, and at a greater distance.

Thirteenth. The immediate erection of a small hospital for infectious cases, to cost \$2,500.

Fourteenth. Concurs in the recommendation of the Superintendent concerning ten wooden houses occupied by twenty soldiers' families in Logtown, to the effect that new buildings be erected upon a high and healthy site, and the old buildings then removed. The appropriation asked for this purpose to be granted.

Fifteenth. The establishment of a chair of military hygiene and first aid to the injured, to be filled by the senior surgeon on duty at the Academy.

Sixteenth. That the gymnastic course now confined to the fourth class year be extended to cover the entire course of the corps of cadets; also the adoption of the Sargent system on measurements or some one equally good.

Seventeenth. The assistant professor in the department of law to be given the pay of a captain mounted.

Eighteenth. The adjutant of the Military Academy to have the pay of a captain mounted.

Nineteenth. The band hereafter to consist of leader and forty men; or, in other words, to be restored to the numbers and pay which it had before the reduction of 1877.

Twentieth. An immediate improvement in the fire-alarm system and the water supply.

In this connection attention is also invited to the recommendation of Colonel Edmands with regard to camp furniture, mattresses, and so on, for use in the cadet encampments; also to the correspondence herewith published resulting from the resolution of the Board that the Superintendent be requested to report the expense and all connected therewith, of preparing a direct-pressure fire system in connection with the new reservoir, as well as upon their request that he cause a careful examination to be made touching the practicability and lawfulness, under the terms of the bequest establishing the Cullum memorial, of the establishment and continuation in the Cullum Memorial Building of the library of the Military Academy.

CONCLUSION.

From the initial meeting of the 1st of June until the thirteenth session on the twelfth day, no day passed without a formal and fully attended meeting of the Board. Meanwhile every possible feature of the Military Academy was thoroughly explored, every department studied, its buildings, barracks, quarters, armament, stores, supplies, and systems scrutinized, its methods of instruction and discipline carefully examined and freely criticized, its corps of officers and its corps of cadets questioned on every point of interest or importance. From first to last every official opportunity was afforded, every consideration shown, and every courtesy extended by persons of every rank and station connected with the Academy, and at the completion of a tour of duty that has been one full of earnest labor as well as pleasure the Board is unanimous in its hearty commendation. It has found the great military training school of the nation in the hands of men devoted to their duties and to its best interests. It has found the officers and instructors men of high character and purpose, of professional ability and personal worth. It has found the battalion of cadets a model of soldierly bearing, precision, and skill, while individually its members have impressed the Board as young athletes in whom the lessons of love of country and devotion to duty, of discipline, honor, and integrity—which are part and parcel of their daily life at West Point—have already borne abundant fruit, and will abide with them for all time.

It has found in the Military Academy of the United States an institution of which the people may well be proud, and which deserves the faith, confidence, and full support of the entire nation.

WM. B. BATE, *President*.

NEWTON M. CURTIS, *Vice-President*.

EDWARD C. WALL, *Secretary*.

ALEXANDER MACKAY-SMITH.

GEORGE H. CRAIG.

WILLIAM W. KEEN.

JOHN D. CRIMMINS.

THOMAS F. EDMANDS.

JOHN J. DAVIS.

REDFIELD PROCTOR.

JOHN C. BLACK.

W. H. HATCH.

DIRECT-PRESSURE FIRE SYSTEM.

MILWAUKEE, WIS., *June 18, 1894.*

COLONEL: I am directed by the Board of Visitors to report to you the following resolution, adopted by that Board:

Resolved, That the Superintendent be requested to report to the Board of Visitors, fully, and at the earliest practicable and convenient date, the expense and all connected therewith, of preparing a direct-pressure fire system in connection with the new reservoir, so as to afford complete protection to all the buildings on the reservation.

I am, Colonel, your obedient servant,

E. C. WALL, *Secretary.*

Col. O. H. ERNST,

Corps Eng., Supt. U. S. Military Academy, West Point, N. Y.

The above letter was referred by the Superintendent of the United States Military Academy to Capt. James L. Lusk, Corps of Engineers, who reported as follows:

WEST POINT, N. Y., *June 27, 1894.*

Respectfully returned to the adjutant, United States Military Academy, West Point, N. Y.

The estimated cost of the project outlined within is as follows:

8,000 linear feet 12-inch mains	\$20, 000
2,000 linear feet 8-inch mains	4, 000
9,000 linear feet 6-inch mains	13, 500
15 additional fire hydrants	1, 500
Total	39, 000

Practically the same result can be effected by extending the existing system of mains supplied from Delafield reservoir, provided that the latter is repaired in accordance with estimates heretofore made. The estimated cost of the repairs to the reservoir and the extended fire service is as follows:

1,500 linear feet 12-inch mains	\$3, 750
4,000 linear feet 8-inch mains	8, 000
11,000 linear feet 6-inch mains	16, 500
15 fire hydrants	1, 500
Repairing and cleaning Delafield reservoir	5, 000
Total	34, 750

The water level of Delafield reservoir is only a few feet lower than that proposed for the new reservoir, and the direct pressure from the former can now be turned on in a few minutes, when required. Delafield

reservoir is, however, deficient in storage capacity, and the dam is in need of repairs, which it is hoped will be undertaken as soon as possible after the completion of the new reservoir.

The direct fire pressures possible from both Delafield reservoir and the new reservoir are ample for all buildings on the reservation except those connected with the new observatory, which must be reached by a steam fire engine. The estimated cost of the mains is high, owing to the certainty of encountering hard rock in laying them.

JAS. L. LUSK,

Captain, Corps of Engineers, in charge of the Water Supply.

LIBRARY OF THE UNITED STATES MILITARY ACADEMY IN THE CULLUM MEMORIAL BUILDING.

MILWAUKEE, WIS., *June 18, 1894.*

COLONEL: I am directed by the Board of Visitors to report to you the following resolution adopted by that Board:

Resolved, That the Superintendent be requested to cause a careful examination to be made touching the practicability and lawfulness, under the terms of the bequest establishing the Cullum Memorial, of the establishment and continuation in the Cullum Memorial Building, to be hereafter erected, of the Library of the West Point Military Academy, so that the same shall not interfere with the memorial character of said building, and so that the books, manuscripts, and documents shall be safely kept.

I am, Colonel, your obedient servant,

E. C. WALL, *Secretary.*

Col. O. H. ERNST,

Corps of Eng., Supt. of U. S. Military Academy, West Point, N. Y.

The above letter was referred by the Superintendent of the United States Military Academy to Prof. John W. Clous, who reported as follows:

WEST POINT, N. Y., *June 21, 1894.*

Respectfully returned to the adjutant, United States Military Academy, West Point, N. Y.

The late Gen. Geo. W. Cullum, in the thirty-third item of his last will and testament (copy inclosed) bequeathed to the United States, under certain terms and conditions, the sum of \$250,000 for the establishment and maintenance of a memorial hall at West Point. This bequest, with the terms thereto annexed, was accepted by Congress in the act approved July 23, 1892, and in section 2 of that act a board of trustees was created and charged with the duty of erecting this memorial hall in accordance with the provisions of the will of the testator, and, on completion, of transferring the same to the United States for perpetual use as a memorial hall, to be devoted to the objects and purposes as defined in said will. These purposes are specified in that instrument as follows:

The memorial hall is to be a receptacle of statues, busts, mural tablets, and portraits of distinguished deceased officers and graduates of the Military Academy; of paintings of battle scenes, trophies of war, and such other objects as may tend to give elevation to the military profession.

By said will, and section 6 of the act above cited, no subject can be introduced into the said memorial hall without the approval of not less than two-thirds of the entire academic board of the United States Military Academy.

These provisions are clear and plain and require no interpretation or construction. A statement of them, in my opinion, sufficiently answers the within resolution of the Board of Visitors and justified the conclusion that Congress could not legally cause the establishment and continuation of the library of the Academy within the memorial hall to be hereafter erected.

J. W. CLOUS,
Senior Colonel and Deputy Judge-Advocate-General,
Professor of Law.

**COPY OF THE THIRTY-THIRD ITEM OF THE LAST WILL AND TESTAMENT OF THE
LATE GEN. GEORGE W. CULLUM, RELATING TO THE ESTABLISHMENT OF A
MEMORIAL HALL AT THE UNITED STATES MILITARY ACADEMY.**

Thirty-third. I give and bequeath to the Government of the United States the sum of two hundred and fifty thousand dollars, upon the following terms and conditions, viz: That during the life of Maj. Gen. James B. Fry and Peter S. Michie, hereinafter named, and, at furthest, within five years after my death, it will authorize to be built, and will build and maintain upon the public grounds at West Point, N. Y., a fireproof stone memorial hall, under the direction of the Superintendent of the Military Academy, three other members of the academic board thereof, and my military executor, Maj. Gen. James B. Fry, or he not surviving at the time, another member of the academic board, all of whom I desire should be graduates of the Military Academy. This memorial hall I wish to be a receptacle of statues, busts, mural tablets, and portraits of distinguished deceased officers and graduates of the Military Academy, of paintings of battle scenes, trophies of war, and such other objects as may tend to give elevation to the military profession; and, to prevent the introduction of unworthy subjects into this hall, I desire that the selection of each shall be made by not less than two-thirds of the members of the entire academic board, the vote being taken by ayes and nays and to be so recorded. It is also my desire that this hall should be adapted for use on any ceremonial occasion taking place at West Point, N. Y., and for the assemblage and dinners of the Association of Graduates of the United States Military Academy; and, if practicable, I wish that lodging accommodations should be provided in some part of it for the members of that association while attending its annual reunions.

A true copy of extract from the last will and testament of Bvt. Maj. Gen. George W. Cullum, United States Army.

J. M. CARSON, Jr.,

First Lieut. Fifth Cavalry, Adjt. U. S. Military Academy.

ADDRESS OF GEN. JOHN C. BLACK.

Mr. Superintendent, gentlemen of the faculty, cadets, and ladies and gentlemen: This occasion is momentous to the members of the class of 1894. You, young men, pass to-day from the seclusion of the Academy to the ranks made illustrious by your predecessors. While memory endures you will call to mind this assemblage and this event, for which you have so many years been in preparation. This hour fulfills your scholastic and training lives. Henceforth you are men of action and responsibility.

I congratulate you on the splendid scenes in which you have heretofore dwelt. Here, if anywhere in America, is classic ground. A century and more has passed since the patriot army, under Washington took defensive position on the banks of the Hudson, interposing its rustic and untrained weakness between the armies of the North and the royal forces that held New York in unrelenting grasp; that dominated the Jerseys and all the rich central regions, and lay like an iron girdle, clasping closer, day by day, about the vitals of the young rebellion, severing its armies, squeezing out its life.

Unable to keep the open field, here came the continental power and builded old Fort Put and reared the river batteries, and filled the hillside with the bivouacs of the brave. How bravely and well they did their work history will long tell to a grateful posterity. By patience, by military skill, by resolute endurance, by a patriotism that suffered all things with equanimity for the country, they succeeded. Long passed away, their glory survives. It makes illustrious this beautiful region; here their shades will linger forever.

As I walk abroad, after silence and darkness have fallen on your busy days, it all but seems that the old Continentals are again on guard. The lights that gleam from villas and sparkle in the windows of lovely homes become again bivouac blazes; the voices of youth and loveliness turn to the challenging hail and answer of patriot war; the night winds bear the ghostly tread of immortals; we review the armies of Liberty and are in the encampments and fortresses of Freedom.

Here, too, as long as the Hudson shall roll to the sea, shall dwell the phantom population whom Washington Irving's genius, summoning from the recesses of three centuries ago, has made permanent denizens of the hills and valleys round about. They troop like elfins through the forest shades; they tread the watery marge; they sail the river's rolling waves; they climb the mountain side, fantastic hosts of the old

times. Ah, gentle master of the magic pen, thy touch has given immortality and woven a spell about these highlands that time nor the stern necessities of a far age can destroy—that pen, mightier than the sword, whose work was all of delight, of purity, and of honor.

But we turn from romantic surroundings to face this audience and review this class, gathered from the confines of the broad Republic, and representing New England, the Pacific, the Central region, and the sunny South. No more illustrious and charming assemblage to-day graces this continent, and we of the audience salute in you, the class, the future major-generals of the American Army. You are the sons of your country—a country which, while once there was doubt as to its purpose and destiny, now, after a century of existence, knows that it is to be united; that every element in its constitution and its laws that might have given color to the thoughts of divided allegiance has, by the teaching of war and the progress of events, come to be without doubt, and which lays upon you whom it educates no divided duty. You have been born in years of profound peace, although scions of the most warlike people. No class that has ever preceded you in this old Academy can say, as you can, “We have never heard the thunders of war nor seen the convulsions of strife.” Measured by the life of the oldest of you, a generation has passed since a gun shook the silence of the land. While the study of the arts of war has been your occupation, you have known it only by theory.

Yet you are the sons of the heroic. Heroism is that quality of manhood which seeks for a knowledge of right and duty, and which, having discovered it, does that duty, whatever may be the sacrifice, the pain, the loss. Heroism counts the cost, but does not hesitate when ascertained. Heroism lifts a man from the contemplation of consequences to himself. Heroism is highest manhood in action. To the upbuilding of this character the history and the few traditions of our beloved land alike contribute. [The speaker here adverted for illustrations to the accomplishments of Paulding, Van Wert, and Williams, Sergeants Jasper and Marion, of Ethan Allen, of May, of Fremont, of Perry, Decatur, John Paul Jones.]

To these men, however poor they might be, honor was everything. Love of their land was the lord paramount of their bosoms. Gold was nothing, although freely offered to some of them in such abundance as to promise release from all future care and rest from all future toil; but they were true to liberty and their dear country, and now that they are dust fame keeps them, and they live in our regard. What was true of them has been the rule in the service. But one American officer has preferred gold to duty. His name, which I will not speak in your hearing, goes through the ages solitary in infamy, covered with shame, the synonym of all that Americans loathe.

While witnessing your graduating exercises I have had occasion to observe the wonderful improvements in modern armament. I have

seen your rapid-fire guns that seem to stir a whirlwind of carnage and that apparently would destroy every living thing toward which they were directed; your smaller arms that carry bullets for a mile away; and have seen elsewhere those grim engines of war that rise to fire and sink into the earth for safety, until it would seem as if modern science had filled the battlefield with such terrors and such death-dealing powers that for men to stand opposed to them is simply exposure to butchery, without the opportunities for compensating strife, and make it seem as if war had lost all its character of glory and splendid beauty; all its opportunities for the exhibition of individual qualities, of chivalry, bravery, and manhood, and had become reduced to the mere slaughter of opposing armies by the rules of precise and deadly mechanism. Trust me that while such seems to be the case the opportunities for the display of heroism are not lost. There still will be—there must be—*room for the men who ride at the guns*, and the future of the dread occupation which you follow will contain the story of the cavaliers of the twentieth century as well as cherish the traditions of those of the earlier time. I repeat, there will always be room in the American service for the heroic; always place for those that shorten the distance between them and their foemen; always a highway to renown for the men who will ride at the guns.

What a country, gentlemen, is yours, and what the vastness of its material power; its unmobilized force is capable of furnishing an army of nine million men. What are you three-score youngsters to do with this mighty country? It is yours to scatter abroad the seeds of the knowledge that you have here acquired, to teach the mighty array of freeman, who look to you first as their dear sons and then as their instructors in the mighty science that you learn, the majesty of organization, the magnificence that pertains to the armies of the free. You are to make this country feel the effects of that discipline which makes you obedient to all lawful authority, observant of all just requirements, the preservers of righteous law, the defenders of the integrity, the honor, and the unity of this mighty land.

It is for you to interpret not alone to your fellow-citizens, but to all who shall see and know you what there is mysterious in the symbol that shines upon your breasts, upon your caps, and upon your breast-plates. It is for you to help make the "U. S." of the American Army greater than the mystic letters that blazed above the Roman eagle when its flight was over all the prostrate world.

What was the meaning of the "S. P. Q. R." of the Cæsars scholars quarrel about? All the conquered nations over whom their eagle flew knew that it meant spoliation, poverty, the quiet of disaster, the ruin of home, country, and law. They, the conquered, knew that it meant woe, that it meant unutterable burdens, that it meant slavery, that it meant that all the resources of the conquered earth were to be drawn to the imperial city, festering in her majesty and her spoils, dying at

last by her own corruption and the heated excesses of her power. But the "U. S." which adorns you, which shines wherever you go, which has been present through all the years of your academic life wherever you turned, which you will bear hence on your breasts and in your hearts: it is your business to teach that the words mean unity, strength, majesty, the dominion of law, the peace of contented people, the establishment of liberty, the growth, the glory, and the freedom of the people.

Here you have studied not alone the arts of destruction, but you have listened to the voice of law. Here you have been taught not alone of the customs of camps, but you know that you are children of the most majestic Republic that ever welcomed the world and humanity to a safe arena for the development of its highest energies. The land which you have been taught to love, whose laws you are trained to obey, whose institutions you hold in honor, and whose integrity it is yours to assist in preserving, is that land of whom the poet has said:

There's freedom at thy gates, and rest
For earth's down-trodden and opprest;
A shelter for the hunted head,
For the starved laborer toil and bread.
Power at thy bounds
Stops, and calls back his baffled hounds.

Oh, fair young mother, on thy brow
Shall sit a nobler grace than now.
Deep in the brightness of the skies
The thronging years in glory rise;
And as they fleet,
Drop strength and riches at thy feet.

Cadets of the Academy, soldiers of the Republic, we who witness your transformation and welcome you to the long list of glorious predecessors we charge you that you see to it—

That no harm befalls the Republic.

At the conclusion of General Black's address, Gen. George D. Ruggles, Adjutant-General of the Army, on behalf of the Secretary of War, delivered the diplomas to the graduates. He said:

Young gentlemen of the graduating class: I have been commissioned by the Secretary of War, in his absence, and as his representative, to deliver to you these testimonials of the academic board of the fact that you have successfully passed through the curriculum of this institution and have been fitted, and are worthy, to become commissioned officers in the Army of your country. I need not assure you that the gratification with which you will receive these diplomas can be measured only by the pleasure experienced by the academic board in conferring them and the pleasure with which I shall now proceed to deliver them to you.

As the Adjutant-General of the Army, in the name of the Army of the United States, I bid you welcome—hearty welcome—to the noble profession upon which you enter actively this day.

APPOINTMENTS AND EXAMINATIONS.

Committee on Appointments and Examinations.—Messrs. MACKAY-SMITH, BLACK, and DAVIS.

Appointments.—Your committee beg to state that they have given much time and thought to this subject. They have been greatly aided by the appearance before them of several of the professors of the Academy, with whom they have discussed the subject at length. Whatever conclusions have been reached, therefore, are the result of joint deliberation between those who have been watching the matter of appointments for years, and visitors who, coming to the Academy with unbiased minds, have brought fresh views and unprofessional ideas to bear upon this important matter. The committee is unanimously of the opinion that immediate action of Congress is desirable in increasing the number of cadets. We are much impressed with the magnificent size and efficiency of the “plant” provided for the education of officers of the Army. The quality of the result produced is a legitimate source of pride to the country. But the classes graduated average only about fifty in the number of diplomas each year. When we consider that the increase in expense would be comparatively trifling if this average were doubled, we can not view with satisfaction the present state of affairs.

We do not regard the furnishing of officers to the general Army as the only important result to be attained by the Academy. The measure of the needs of that Army is not the only measure of the nation's demand. That demand is that whenever the call to arms comes, with its appeal for volunteers, there should be found scattered here and there throughout the country, whether in barracks or civil life, a sufficient number of skillful officers to teach our untrained levies. At the outbreak of our civil war Grant was a farmer and Sherman a professor, but it was not mere chance that soon made them leaders of armies. We regard the education given at West Point as a thorough preparation for business life, with the privilege attached to it that its possessor carries everywhere with him information that may at any time become suddenly priceless to his country. The school is supported by the people; they have a right to enjoy the utmost possible results attainable, in quantity as well as quality. Under the present arrangement the opportunity to educate fifty additional men every year is being wasted; every year the chance to place fifty men here and there in the United States who, on emergency, can be centers of scientific military intelligence, is thrown away. Or, look at it merely from an economical

point of view, every year the cost of training an officer at the Academy is nearly twice the sum to which it might be reduced by doubling the number of cadets.

We beg, therefore, to urge upon Congress a change in the present law, so as to give each United States Senator the same privilege of nomination to the Academy each year as that possessed by members of the House of Representatives, as well as to restore to the President the power formerly exercised, of nominating ten candidates annually at large, instead of practically ten in four years, as at present. The number of candidates would thus be increased by over one hundred. The number of cadets would also be raised theoretically from 370 to about 470, but (allowing for failures) from about 280 to 290, the present average, to about 350. The Academy has accommodations for 370 cadets. This recommendation has been often made. Its reiteration, year after year, shows the serious need on which it is based in the opinion of those who have studied the question. Even with the 350 cadets the Academy would be keeping considerably behind its possible attainments, but a beginning would at least be made in the effort to prepare a country for war which in all its legislation is very properly tuned to the keynote of peace. The demand is all the more urgent since the military profession is year by year requiring more and more technical, mechanical, scientific information in its discharge. A modern officer, like a modern fort or an iron clad, requires twice as long to build as a generation ago. Our next war may in all probability be decided by certain factors in the problem for which our fathers had no name.

Examinations.—(a) *Entrance examinations.*—All that the committee can learn regarding these examinations shows that while they are rigid and result in the rejection of many candidates, there is yet a proper degree of flexibility exercised, and that applicants who impress the examining board as possessing soldierly qualities are not sent down on small technicalities. But the fact remains that, from one cause or another, there is a great failure in filling vacancies and in making appointments. The committee, therefore, concurs in the recommendation of the committee reporting on this subject in the report for 1892:

Let the examining board meet at the various posts as now designated. Let the nominating power (of applicants for examination to go before the examining board on March 1 of each year) select in the various Congressional districts three young men, by forms sent out from the War Department, as 1, 2, 3, etc. Let these three men go before the board at the March meeting, all for examination. If No. 1 fails, No. 2 will have a chance; if No. 2 fails, No. 3 will have a chance. We think that out of three men one could be secured. We would suggest when failure occurs at the end of any annual examination, that this failure be reported to the Congressman within ten days, and that he be requested to name and send his men before the examining board of the nearest post for examination within thirty days.

(b) *Examinations in course.*—These seem to the committee, after attending them for several days, to be absolutely fair and searching. We can not but regret, however, that the manner as well as the

matter in recitation is not more carefully attended to. The pronunciation of the cadets is found at times to be indistinct. They do not enunciate clearly and evenly, and the voices are apt to be badly modulated, and harsh. The committee heard, at times, some words wrongly pronounced without correction by the examiner, but suppose that his failure to correct was due to the fact that a public examination rather than a private recitation was in progress.

ALEXANDER MACKAY-SMITH. *Chairman.*

JOHN C. BLACK.

JOHN J. DAVIS.

DISCIPLINE AND INSTRUCTION.

Committee on discipline and instruction.—Messrs. GEORGE H. CRAIG, WILLIAM W. KEEN, and NEWTON M. CURTIS.

The committee on discipline and instruction beg leave to report as follows:

In reviewing the course of study the committee found it impossible to obtain an accurate idea of the relative and proportionate amount of attention given to each study in the curriculum. Accordingly they requested the Superintendent to furnish them the sum total of the hours devoted to each study. This is given in the appended letter and table:

DEPARTMENT OF MODERN LANGUAGES,
West Point, N. Y., June 11, 1894.

SIR: In compliance with your request of this date, I have the honor to state with regard to the hours of recitation given to English language and literature, as follows:

Hours of recitation in fourth class year.....	84
Hours of study, fourth class year	210

This subject is taught in the fourth class year only.

Bearing in mind the destination of the cadet as an officer of the Army, and the kind and number of the branches of study essential thereto, the above allotment of time is, I think, sufficient.

Very respectfully, your obedient servant,

E. E. WOOD,
Professor Modern Languages, United States Military Academy.

Hon. GEORGE H. CRAIG,
Chairman Committee on Discipline and Instruction, Board of Visitors.

Time employed in recitations and studies by the cadets of the United States Military Academy in each department in the four classes during each academic year.

Year and class.	Department.	Academic year, September 1 to May 31.		
		Hours of recitation.	Hours of study.	Total hours.
First year, fourth class	Mathematics	334½	669	1,003½
	Modern languages	185	376	561
	History, geography, and ethics	Omitted in new course.		
	Drill regulations, United States Army.	Infantry, 46 hours practical instruction.		
	Use of swords, etc.....	Artillery, 35 hours practical instruction.		
Second year, third class	Mathematics	334½	669	1,003½
	Modern languages	223	446	669
	Drawing	288	None.	288
	Drill regulations, United States Army.	Infantry, 46 hours practical instruction.		
	Practical military engineering.....	Artillery, 35 hours practical instruction.		
Third year, second class.....	Natural and experimental philosophy.	334½	669	1,003½
	Chemistry, mineralogy, and geology..	188½	377	565½
	Drawing	185	None.	185
	Drill regulations, United States Army.	Infantry, 41 hours practical instruction.		
	Practical military engineering.....	Artillery, 17½ hours practical instruction.		
Fourth year, first class	Civil and military engineering and science of war.	334½	669	1,003½
	Modern languages	50½	101	151½
	Law	92½	185	277½
	History, geography, and ethics.....	42	84	126
	Practical military engineering.....	24½ hours practical instruction.		
	Natural and experimental philosophy.	Practical instruction in camp.		
	Drill regulations, United States Army.	Infantry, 36 hours practical instruction.		
	Ordnance and gunnery	92½	185	277½
Grand total.....		7,837½		

J. M. CARSON, Jr.,

First Lieutenant Fifth Cavalry, Adjutant.

HEADQUARTERS UNITED STATES MILITARY ACADEMY,

West Point, N. Y., June 9, 1894.

Such a table gives a true perspective of the academic course. It affords room for some reflections and conclusions, especially as to the preponderance of some studies and the brevity or lack of others. Their conclusions are not intended in any sense as a reproach upon the

faculty, whom we recognize as men of the highest ability and learning and devotion to their work and the best interests of the Academy. They are the honest conclusions which we have reached after not a little careful consideration of the subject, and suggestions which we hope will be of value from independent men who are only desirous of adding to the prosperity of the Academy.

The committee were rather painfully impressed in the examinations with the halting English of a number of the cadets. During three of the four years, as is shown by the table, 1,375½ hours of recitation and study are given to "modern languages," but of this only 84 hours are given to recitations and 210 hours to the study of the English language and literature. French and Spanish are the only other two modern languages taught, and cover 1,081 hours for both.

It is of course perfectly clear that in the four years of the course here it is impossible to make the cadets both soldiers and scholars. Spanish has been selected presumably because of its usefulness to our officers on our Mexican frontier. French was perhaps selected many years ago because it was the polite language of European society. To a great extent this is still true, although English has largely supplanted it, even in diplomacy. The committee would submit for consideration whether German may not at some time in the future be profitably introduced. So far as we know, the modern literature of military affairs, whether of the science or the art of war, in German is more extensive and more valuable than that in French, or certainly in Spanish. While not prepared to recommend this step immediately, they would suggest that the academic board consider this question very seriously.

In the matter of English, however, the committee is very clear that much more time should be given to it. It is the mother tongue of almost every cadet; it must be constantly used by every officer in his orders, and as a medium of communication and making effective all his knowledge is quite as important as any of the scientific branches. Yet we find of a grand total of 7,837½ hours of study and recitation in the four years at West Point, over 2,000 hours given to the mathematical branches, over 1,000 hours each to two other modern languages and to modern physics, 227½ to law, 565½ to chemistry, mineralogy and geology, and only 294 hours to English. Every officer should know how to use the English language accurately and tersely. A single order written hurriedly amid the emergencies of battle, if not in clear and plain English may cause disaster, and even defeat. Besides this, the cadets come here at about nineteen years old on the average. At that age their knowledge of English and especially of English literature, is slight, and their taste unformed. Few essays or themes, we believe, are required of them by which they can cultivate an exact, graceful, and perspicuous style. They have no time out of study hours to pursue any courses of reading, and indeed such reading is discouraged by both traditions and regulations. We therefore recom-

mend a fuller English course, even at the expense of some of the 2,007 hours given to mathematics, or those given to some other study.

The same may be said to some extent of history, geography, and ethics. Faithful and diligent as any professor may be, and the professors here we know are, it is almost a travesty upon sound learning to force them to attempt to teach these three important branches in forty-two recitations and eighty-four hours of study. Geography ought to be completed, in our opinion, before the student sets foot within the limits of this academic institution. Even then, history and ethics should have each as large a field as all these three have at present.

We realize the fact that the cadets are worked up to their full capacity. No additional hours of study can be introduced into the curriculum without detriment to their health. The only two possible ways of attaining the desired end are either (1) by curtailing the more extended or least useful studies, or (2) by making the requirements for admission cover some of the subjects now taught in the Academy. Of these two the committee decidedly favor the latter, and would urge that all of geography and plane geometry, and a considerable part of algebra, if not all of it, be required for entrance. This would only require probably six months more of study before entering the Academy, and would provide very much needed time for English, history, ethics, hygiene, and possibly for German.

It is urged that this will cut off some poor boys who otherwise might enter, and even graduate. Even were this true, it would be better to cut off a few ill-trained poor boys entering as officers than by a less thorough training of the whole corps of cadets to expose the thousands of poor men in the ranks to the evils of poorly equipped officers. But West Point exists neither for the poor boy nor the rich boy, but to give the country the very best and most efficient officers to command its Army, upon which often depends security of life and property, public and private, in cases of domestic disturbances, and upon which must always absolutely depend victory in time of foreign war. No officer can be too well trained for such a command. It is very easy to provide officers too poorly equipped, and so invite defeat.

The increase suggested in the conditions for admission is very moderate. The present requirements were formulated nearly 40 years ago, when our public schools were poor and scattered, and the instruction given in them was very limited. This is not true now. The enormous strides made in preliminary education should make our war college also make equal advances. The public schools are ready to furnish better students just so soon as West Point will take them.

The Naval Academy at Annapolis requires some algebra, and the Army may take a lesson from its course and in turn give it a lesson by adding geography and plane geometry to the requirements here.

One other point of great importance to the faculty and instructors here we desire to mention. Nothing is a greater stimulus or more

instructive to any teacher than to visit other allied institutions in this country and abroad, to compare his teaching, his methods, his illustrations and experiments with those of others. It broadens his mind, gets him, or, better, keeps him out of ruts, and shows him very often that he and his college are not the ne plus ultra of the best technical education. In all other branches it is so, and undoubtedly, therefore, in the military profession.

Accordingly, the committee recommend that, say, once in seven years, in turn, the members of the Academic Board, at least, be given leave of absence on full pay for six months or a year, with a view to such study in their respective departments. Possibly some similar leave to the technical officers would be equally advantageous before they enter the service here.

The question of the restriction of the chaplain's duties to those of his office and his ceasing to act as a professor, and therefore a disciplinary officer, has been considered by the committee, entirely irrespective of course of the present excellent occupant of the office. We can not but think that his moral and spiritual efficiency may be hampered if not destroyed by his duties in instruction. We recommend, therefore, that the chaplain's duties be restricted to those of his profession. The presence of 1,500 persons on the reservation will afford him an ample parish for the exercise of every good office.

In order to compare this Military Academy at West Point with other similar institutions, the committee would suggest that immediately after the appointment of the next Board of Visitors they be furnished by the Secretary of War with a brief but sufficiently full résumé of the conditions for admission and the course of study in other American semimilitary institutions, and at the Naval Academy at Annapolis, and especially in the national schools of instruction in military and naval training in Great Britain, France, Germany, Austria, Italy, and Russia, together with any other data of importance pertaining to this subject. This would enable the Board to form much more correct comparisons between West Point and other schools.

The discipline of the Academy recommends itself highly to the committee. The regulation drills and the unexpected and unwelcome fire drill, made necessary by the burning of a coal shed, were evidences than which we could ask no better.

GEORGE H. CRAIG, *Chairman.*

NEWTON M. CURTIS.

W. W. KEEN.

scattered throughout the academic year, are, in the department of ordnance and gunnery, concentrated for convenience in this one month. So far as labor goes it includes more of it than the same time spent in instruction in the section room.

(4) In addition to his academic duties, the senior assistant in ordnance and gunnery is attached to the ordnance detachment; his duties require him to assist in looking after the condition of the armament here, keeping the batteries in order, and attending to numerous details outside the section room. This is not required of any assistant in any other academic department. There is no reason why, in my judgment, this discrimination as regards pay should be made against the senior assistant in the department of ordnance and gunnery, when his duties are the same and at times greater than those of the senior assistants of other departments, and, on the other hand, there is every reason why such discrimination should not be made.

Very respectfully, your obedient servant,

LAWRENCE L. BRUFF,

Captain, Ord. Dept., U. S. A., Instructor of Ordnance and Gunnery.

The ADJUTANT,

United States Military Academy.

UNITED STATES MILITARY ACADEMY,
OFFICE OF INSTRUCTOR OF ORDNANCE AND GUNNERY,
West Point, N. Y., June 7, 1894.

SIR: In accordance with request contained in your letter of this date, and by direction of the Superintendent of the United States Military Academy, I have the honor to submit for the information of your committee the following statement with reference to the present armament, and also a list of the obsolete guns and mortars on hand, known as "trophy guns."

The present armament is as follows:

In seacoast battery.—One 15-inch Rodman gun mounted on center-pintle carriage, with pneumatic buffers; one 15-inch Rodman gun mounted on front-pintle carriage, with hydraulic buffers; three 8-inch converted rifles, two on modern carriages; one 10-inch Rodman smoothbore gun on old carriage; one 200-pounder Parrott rifle on old carriage; one 13-inch smoothbore mortar on old carriage.

In battery Knox.—One 100-pounder Parrott rifle on old carriage; one 300-pounder Parrott rifle on old carriage; four 10-inch Rodman smoothbore guns on old carriages.

In siege battery.—Six 4.5-inch cast-iron rifled siege guns mounted on wooden carriages. These guns are not used except for drill purposes. Six 10-inch smoothbore mortars mounted on iron mortar beds.

In field battery.—One battery 3.20-inch steel breech-loading field guns with limbers, caissons complete, for mounted drill. One battery 3.20-inch steel breech-loading field guns with limbers. The caissons of this battery are of the old pattern, and the battery is used for foot drill. One battery 3-inch wrought-iron muzzle-loading rifles with limbers and caissons complete, old pattern. This battery is not required for drill purposes, and is used only as a saluting battery.

Machine guns.—One Gatling gun, caliber .45, model 1875, short barrel; one Gatling gun, caliber .45, model 1883, long barrel; one Gardner gun, caliber .45; one Maxim automatic machine gun, caliber .45.

Rapid-fire guns, etc.—One Hotchkiss revolving cannon, caliber 1.50; one Hotchkiss mountain gun, caliber 1.65; one Hotchkiss rapid-fire gun, 3-pounder; one Nordenfolt rapid-fire gun, 3-pounder.

and on the plain, have excited the admiration of the committee, and entitle him to great credit, especially when the difficulties he has to contend with are considered, while Lieutenant Dyer, the inspector in artillery, entitled to the same commendation, accomplishes similar results in his branch under similar drawbacks, where cavalry horses must be used in light-battery drill. Horses purchased with a view to this double duty are naturally unfit for either, and their double use practically spoils them for either duty.

An important adjunct in the training of the cadets for the mounted arms, particularly in the cavalry, is the complete gymnasium with which the Academy is equipped, where Mr. Koehler, who, in the opinion of the committee, should have the rank, pay, and emoluments of a lieutenant, has shown himself to be an instructor capable of developing to a high condition of physical training the young soldiers in whose performances the committee has taken great satisfaction.

The recommendation made by the commandant of cadets, contained in the report of the Superintendent of the Academy for 1893, that twenty-eight enlisted men of the cavalry detachment, while employed as artillery drivers, shall receive extra pay, has been embodied in House bill 5894, making appropriations for the Military Academy for the fiscal year ending June 30, 1895, and is cordially concurred in by this committee with the hope that it become a law.

The committee had not time in which to make a careful inspection of the signal equipment, nor has it seen any drill performed in this important branch of military duty; but inquiry induces the committee to believe that the equipment may be rather meager, and that perhaps there might advantageously be more signal instruction given during the whole course.

THOMAS F. EDMANDS, *Chairman.*
WILLIAM H. HATCH.
WILLIAM B. BATE.

UNITED STATES MILITARY ACADEMY,
OFFICE OF INSTRUCTOR OF ORDNANCE AND GUNNERY,
West Point, N. Y., June 7, 1894.

SIR: I have the honor to forward herewith, for the consideration of the Superintendent and the Board of Visitors, the following recommendation relating to the department of ordnance and gunnery:

I would respectfully recommend that the pay of the senior assistant instructor in the department of ordnance and gunnery be that of a captain mounted.

I make the recommendation for the following reasons:

(1) The only academic department at the Academy whose senior assistants do not receive this pay are those of law and ordnance and gunnery.

(2) Academic duties of the senior assistant in ordnance and gunnery extend through the academic year, beginning with September and ending the 1st of June, as with the other academic departments.

(3) The month of April, which is apparently an exception to this, is not so in reality, as the lectures and practical instruction, which in other departments are

scattered throughout the academic year, are, in the department of ordnance and gunnery, concentrated for convenience in this one month. So far as labor goes it includes more of it than the same time spent in instruction in the section room.

(4) In addition to his academic duties, the senior assistant in ordnance and gunnery is attached to the ordnance detachment; his duties require him to assist in looking after the condition of the armament here, keeping the batteries in order, and attending to numerous details outside the section room. This is not required of any assistant in any other academic department. There is no reason why, in my judgment, this discrimination as regards pay should be made against the senior assistant in the department of ordnance and gunnery, when his duties are the same and at times greater than those of the senior assistants of other departments, and, on the other hand, there is every reason why such discrimination should not be made.

Very respectfully, your obedient servant,

LAWRENCE L. BRUFF,

Captain, Ord. Dept., U. S. A., Instructor of Ordnance and Gunnery.

The ADJUTANT,

United States Military Academy.

UNITED STATES MILITARY ACADEMY,
OFFICE OF INSTRUCTOR OF ORDNANCE AND GUNNERY,
West Point, N. Y., June 7, 1894.

SIR: In accordance with request contained in your letter of this date, and by direction of the Superintendent of the United States Military Academy, I have the honor to submit for the information of your committee the following statement with reference to the present armament, and also a list of the obsolete guns and mortars on hand, known as "trophy guns."

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In battery Knox.—One 100-pounder Parrott rifle on old carriage; one 300-pounder Parrott rifle on old carriage; four 10-inch Rodman smoothbore guns on old carriages.

In siege battery.—Six 4.5-inch cast-iron rifled siege guns mounted on wooden carriages. These guns are not used except for drill purposes. Six 10-inch smoothbore mortars mounted on iron mortar beds.

In field battery.—One battery 3.20-inch steel breech-loading field guns with limbers, caissons complete, for mounted drill. One battery 3.20-inch steel breech-loading field guns with limbers. The caissons of this battery are of the old pattern, and the battery is used for foot drill. One battery 3-inch wrought-iron muzzle-loading rifles with limbers and caissons complete, old pattern. This battery is not required for drill purposes, and is used only as a saluting battery.

Machine guns.—One Gatling gun, caliber .45, model 1875, short barrel; one Gatling gun, caliber .45, model 1883, long barrel; one Gardner gun, caliber .45; one Maxim automatic machine gun, caliber .45.

Rapid-fire guns, etc.—One Hotchkiss revolving cannon, caliber 1.50; one Hotchkiss mountain gun, caliber 1.65; one Hotchkiss rapid-fire gun, 3-pounder; one Nordenfölt rapid-fire gun, 3-pounder.

CHANGES IN ARMAMENT.

Seacoast battery.—During the past year the following guns and carriages have been received at the post: One 8-inch steel breech-loading rifle; one barbette carriage for same.

As soon as the money is available this gun and carriage will be mounted in the seacoast battery in place of the right 15-inch smoothbore Rodman gun.

There is also on hand one 12-inch breech-loading mortar, cast iron, with steel hoops. This mortar is to be replaced by a 12-inch breech loading steel mortar which represents the latest model.

A carriage for this mortar has been ordered by the Chief of Ordnance to be shipped here, and its arrival is daily expected. When received and when the money is available, the mortar will be mounted in the seacoast battery in place of the present 13-inch smoothbore.

The 8-inch gun is a type of all the other high-powered steel guns. The larger ones, 10 and 12 inch, differing from it only in size and in a few minor details.

The mortar also represents its class. Hence these two guns and their carriages will thoroughly familiarize cadets with modern guns and carriages and with their workings.

Owing to the limited range available here (only about 2,100 yards) and to the fact that the projectiles are fired against the inclined face of a rock, there is considerable danger attending target practice with these guns. If it is desired to arm the seacoast battery throughout with modern high-powered guns, some arrangement for stopping these projectiles will be necessary, such as a butt or a tunnel at the end of the range.

Till this is provided it has been thought best to limit the modern armament to the two guns mentioned.

The subject of disappearing carriages has attracted much attention at home and abroad, and two such carriages, the Buffington-Crozier and the Gordon, have been successfully tested at the proving ground. One of these carriages, the Buffington-Crozier, has been selected by the Chief of Ordnance to be sent to the Military Academy, and as it mounts an 8-inch steel rifle, this will give a second gun of this caliber to be added to the armament. The carriage will be used also to illustrate the principles pertaining to this class.

In addition to this there are at present in the seacoast battery three front-pintle barbette carriages of old pattern. Two of these carriages mount a 10-inch Rodman smoothbore gun and a 200-pounder Parrott, respectively. These carriages are to be replaced by three altered front-pintle barbette carriages, of the latest pattern, as soon as emplacements can be provided for them. The carriages are now here.

The 10-inch Rodman and 200-pounder Parrott are to be replaced by two 8-inch converted rifles, which are also on hand. This will render the armament of the seacoast battery complete as at present contemplated.

Siege battery.—In the siege battery no progress has been made. It is proposed to mount four 5-inch steel breech-loading siege guns and two 7-inch steel breech-loading howitzers in this battery.

The guns are ready and can be sent here at any time, but the carriages are not yet ready. The latest information on the subject leads me to believe that the carriages will be furnished before June next.

The smooth bore mortars are to be replaced by 7-inch steel breech-loading siege mortars as soon as they can be furnished.

Battery Knox.—No changes are contemplated in this battery, as it is not used for purposes of instruction.

Field batteries.—No changes are required here, as it is believed the batteries as at present constituted fulfill all the requirements demanded of them. As soon as they are available it is intended to replace the old wooden caissons used with the 3.20-inch foot battery by modern caissons. The great demand for these carriages by

the Army has so far prevented the Chief of Ordnance from furnishing them for use here.

Machine and rapid-fire guns.—During the year there have been received one Nordenfelt rapid-fire gun, 3-pounder, mounted on a nonrecoil field carriage, and a Maxim automatic machine gun, caliber 45.

These machine and rapid-fire guns form important parts of the instruction of cadets. They are first studied with the aid of drawings in the recitation room, and afterwards the cadets are required to dismount and assemble the guns themselves and their attention especially directed to the distinctive features of each gun.

These guns are a very important feature of modern ordnance, and they can not be thoroughly understood without the aid of the guns themselves. Hence I deem it important that the Military Academy should possess all the prominent guns of this class before the public, and respectfully request that at least one of them be purchased each year. By this means, at a comparatively small expense, the Academy will possess a collection of these guns valuable for purposes of instruction and for the museum.

Small arms.—The recent changes in the caliber of the infantry rifle from .45 to .30 has introduced many changes in the mechanism of these arms both here and abroad. Two of these arms for the United States Army have been received here with a supply of ammunition, and the graduating class has been instructed in the management of the arm and its working. As in the case of machine and rapid-fire guns, these arms can only be studied with advantage from the guns themselves.

The Academy has practically none of the arms used in foreign services, and it should have all of them. I would therefore recommend that steps be taken to procure samples of these arms, with their ammunition, through our military attachés abroad.

Models of guns and carriages.—During the year the department has received from the gun factory at Watervliet Arsenal, the following steel models of our new service guns: One model 3.60 mortar, one-tenth size; one model 3.60 mechanism, one-half size; one model 3.20 field gun, one-tenth size; one model 3.20 mechanism, one-half size; one model 5-inch siege gun, one-tenth size, complete; one model 10-inch rifle, one-tenth size, complete; one model 12-inch mortar, one-tenth size, complete.

The advantage of having these models in the recitation room for purposes of instruction is very great, as has been shown during the present year. It is intended to complete the purchase of the models of all the service guns as soon as funds are available, and an estimate to that effect is contained in the present appropriation bill now before Congress. Models of all service carriages should also be provided, and an estimate for the purchase of these models is also before Congress. The amount asked for, however, is not sufficient to provide for the purchase of all these models, and it is recommended that an additional amount of \$3,000 be asked for. The cost of these models can not be estimated very closely, as the work is entirely new, but the above amount, with that already estimated for, will go far to provide them.

MUSEUM.

A room has been provided in the new academic building for a museum. There is a very valuable collection of flags, swords, guns, etc., belonging to the Academy, which should be properly stored and displayed. For this purpose funds are necessary to provide show cases, color stands, cabinets, etc., and I would respectfully recommend that the sum of \$2,000 be provided for this purpose.

RECAPITULATION OF RECOMMENDATIONS

- (1) Purchase of machine and rapid-fire gun.
- (2) Acquisition of samples of small arms through military attachés.
- (3) Three thousand dollars for models of modern gun carriages.

(4) Two thousand dollars for show cases, color stands, etc., for museum.

Trophy guns.—A list of trophy guns on hand at the Military Academy is forwarded herewith as requested by the committee.

Very respectfully, your obedient servant,

LAWRENCE L. BRUFF,

Captain Ordnance Department, Instructor Ordnance and Gunnery.

Col, THOMAS F. EDMANDS,

Chairman of Committee on Armament, etc.

(Through headquarters United States Military Academy.)

List of trophy guns, etc.

Num-ber.	Gun, etc.	Num-ber.	Gun, etc.
REVOLUTIONARY TROPHIES.		MEXICAN TROPHIES—continued.	
1	3-pounder brass field gun, surrendered at Saratoga Convention.	1	4-pounder bronze mountain howitzer, surrendered at Monterey, caliber 3.75.
1	8-inch bronze howitzer, surrendered at Saratoga Convention.	1	4-pounder bronze mountain howitzer, surrendered at Monterey, caliber 3.75.
1	12-pounder brass gun, captured at Stony Point.	1	16-pounder bronze gun, surrendered at Vera Cruz, caliber 5.25.
1	10-inch brass mortar, captured at Stony Point.	1	16-pounder bronze gun, surrendered at Vera Cruz, caliber 5.25.
4	5½-inch bronze mortars, surrendered at Saratoga Convention.	1	16-pounder bronze gun, surrendered at Vera Cruz, caliber 5.32.
7	4½-inch bronze mortars, surrendered at Saratoga Convention.	1	12-pounder bronze gun, surrendered at Vera Cruz, caliber 4.8.
7	6-pounder bronze guns, captured at Stony Point.	1	12-pounder bronze gun, surrendered at Vera Cruz, caliber 4.75.
2	4-pounder bronze guns, captured at Stony Point.	1	12-pounder bronze gun, surrendered at Vera Cruz, caliber 4.7.
1	Brass culverin, presented to Congress by General Lafayette.	1	8-pounder bronze gun, surrendered at Vera Cruz, caliber 4.2.
MEXICAN TROPHIES.		1	6-pounder bronze gun, surrendered at Vera Cruz, caliber 3.75.
1	8-pounder bronze gun, captured at Resaca de la Palma, caliber 4.25.	1	6-pounder bronze gun, surrendered at Vera Cruz, caliber 3.75.
1	8-pounder bronze gun, captured at Resaca de la Palma, caliber 4.25.	1	4-pounder bronze gun, surrendered at Vera Cruz, caliber 3.5.
1	6-pounder bronze gun, captured at Resaca de la Palma, caliber 3½.	1	10-inch bronze mortar, surrendered at Vera Cruz.
1	6-pounder bronze gun, captured at Resaca de la Palma, caliber 3.6.	1	8-pounder bronze gun, captured at Cerro Gordo, caliber 4.2.
1	4-pounder bronze gun, captured at Resaca de la Palma, caliber 3.45.	1	6-pounder bronze gun, captured at Cerro Gordo, caliber 3.6.
1	4-pounder bronze gun, captured at Resaca de la Palma, caliber 3.35.	1	6-pounder bronze gun, captured at Cerro Gordo, caliber 3.4.
1	4-pounder bronze gun, captured at Resaca de la Palma, caliber 3.4.	1	4-pounder bronze gun, captured at Cerro Gordo, caliber 3.5.
1	4-pounder bronze gun, captured at Resaca de la Palma, caliber 3.5.	1	4-pounder bronze gun, captured at Cerro Gordo, caliber 3.5.
1	8-pounder bronze gun, captured at Matamoras, caliber 4.25.	1	4-pounder bronze gun, captured at Cerro Gordo, caliber 3.35.
1	4-pounder bronze gun, captured at Matamoras, caliber 3.35.	1	17-inch bronze mortar, surrendered at Peroto Castle.
1	4-pounder bronze howitzer, captured at Matamoras, caliber 3.75.	1	17-inch bronze mortar, surrendered at Peroto Castle.
1	4-pounder bronze howitzer, captured at Matamoras, caliber 3.75.	1	17-inch bronze mortar, surrendered at Peroto Castle.
1	6½-pounder bronze howitzer, captured at Matamoras.	1	17-inch bronze mortar, surrendered at Peroto Castle.
1	12-pounder bronze gun, surrendered at Monterey, caliber 4.8.	1	16-pounder bronze gun, captured at Contreras, caliber 5.2.
1	8-pounder bronze gun, surrendered at Monterey, caliber 4.25.	1	12-pounder bronze gun, captured at Contreras, caliber 4.8.
1	8-pounder bronze gun, surrendered at Monterey, caliber 4.25.	1	12-pounder bronze gun, captured at Contreras, caliber 4.85.
1	8-pounder bronze gun, surrendered at Monterey, caliber 4.25.	1	12-pounder bronze gun, captured at Contreras, caliber 4.8.
1	4-pounder bronze gun, surrendered at Monterey, caliber 3.15.	1	8-pounder bronze gun, captured at Contreras, caliber 4.2.
1	4-pounder bronze gun, surrendered at Monterey, caliber 3.15.	1	8-pounder bronze gun, captured at Contreras, caliber 4.2.
1	6½-pounder bronze howitzer, surrendered at Monterey.	1	6-pounder bronze gun, captured at Contreras, caliber 3.75.

List of trophy guns, etc.—Continued.

Num-ber.	Gun, etc.	Num-ber.	Gun, etc.
MEXICAN TROPHIES—continued.		MEXICAN TROPHIES—continued.	
1	6-pounder bronze gun, captured at Contreras, caliber 3.85.	1	8-pounder bronze gun, captured at Matamoros, caliber 4.2.
1	6-pounder bronze gun, captured at Contreras, caliber 3.9.	1	6-pounder bronze gun, captured at Matamoros, caliber 3.8.
1	6-pounder bronze gun, captured at Contreras, caliber 3.5.	1	4-pounder bronze gun, captured at Matamoros, caliber 3.34.
1	4-pounder bronze gun, captured at Contreras, caliber 3.4.	1	Battery, 4 pieces—Rengold's Battery—Mexican war.
1	4-pounder bronze gun, captured at Contreras, caliber 3.6.	1	Battery, 4 pieces—Duncan's Battery—Mexican war.
1	4-pounder bronze gun, captured at Contreras, caliber 3.4.	TROPHIES FROM 1861 AND 1865.	
1	4-pounder bronze gun, captured at Contreras, caliber 3.45.	1	8-inch Armstrong rifle, United States, captured at Fort Fisher, N. C.
1	8-inch bronze howitzer, captured at Contreras.	1	3.68-inch Confederate steel rifle.
1	8-inch bronze howitzer, captured at Contreras.	1	3-inch Confederate cast-iron rifle.
1	8-inch bronze howitzer, captured at Contreras.	1	12-pounder Confederate S. B. gun, captured at Cedar Creek, Virginia.
1	8-inch bronze howitzer, captured at Contreras.	1	12-pounder Confederate S. B. bronze gun.
1	6½-inch bronze howitzer, captured at Contreras.	2	3-inch Brooks cast and wrought iron gun, captured at Vicksburg, Miss.
1	7½-inch bronze mortar, captured at Contreras.	1	6-pounder bronze Confederate gun, rifled.
1	16-pounder bronze gun, captured at San Antonio, caliber 5.25.	7	6-pounder bronze Confederate guns S. B., captured along Mississippi River.
1	16-pounder bronze gun, captured at San Antonio, caliber 5.25.	2	12-pounder bronze field howitzers, S. B., captured along Mississippi River.
1	4-pounder bronze gun, captured at San Antonio, caliber 3.45.	1	4.8-inch Brooks cast-iron rifled gun, captured along Mississippi River.
1	16-pounder bronze gun, captured at Churubusco, caliber 5.25.	2	24-pounder cast-iron rifled guns, captured along Mississippi River.
1	8-pounder bronze gun, captured at Churubusco, caliber 4.2.	2	24-pounder cast-iron S. B. guns, captured along Mississippi River.
1	8-pounder bronze gun, captured at Churubusco, caliber 4.2.	1	32-pounder cast-iron S. B. navy gun, captured on boat on Mississippi River.
1	8-pounder bronze gun, captured at Churubusco, caliber 4.2.	1	7.5-inch Blakely cast-iron rifled gun, captured at Vicksburg, Miss.
1	8-pounder bronze gun, captured at Churubusco, caliber 4.2.	1	8-inch Blakely cast-iron rifled gun, captured at Fort Morgan, Ala.
1	6-pounder bronze gun, captured at Churubusco, caliber 3.75.	1	8-inch navy cast-iron S. B. gun, captured along Mississippi River.
1	6-pounder bronze gun, captured at Churubusco, caliber 3.7.	2	Small brass guns, caliber 2.2.
1	6-pounder bronze gun, captured at Churubusco, caliber 3.6.	1	3.1-inch Clay breech-loading steel gun, captured at Danville, Va.
1	6-pounder bronze gun, captured at Churubusco, caliber 3.55.	1	Small Colt revolving gun.
1	4-pounder bronze gun, captured at Churubusco, caliber 3.45.	1	1.8-inch breech-loading S. B. cast-iron gun.
1	4-pounder bronze gun, captured at Churubusco, caliber 3.4.	2	6-pounder bronze rifled guns.
1	4-pounder bronze gun, captured at Churubusco, caliber 3.57.	1	30-pounder Brooks cast-iron rifled gun, captured at Richmond, Va.
1	6-pounder bronze gun, captured at Molino del Rey, caliber 3.85.	1	3-inch cast-iron rifled gun, captured at Richmond, Va.
1	6-pounder bronze gun, captured at Molino del Rey, caliber 3.85.	1	1½-inch cast-iron muzzle-loading rifle.
1	4-pounder bronze gun, captured at Molino del Rey, caliber 3.45.	1	12-pounder breech-loading cast-iron S. B. gun, found at Fort Richmond.
1	24-pounder bronze gun, captured at Chapultepec, caliber 6 inches.	1	6½ by 1½ inch gun built up of cast and wrought iron, captured at Richmond, Va.
1	24-pounder bronze howitzer, captured at Chapultepec.	1	24-pounder cast-iron Cohorn mortar.
1	8-inch bronze howitzer, captured at Chapultepec.	1	12-pounder cast-iron Cohorn mortar.
1	4-pounder bronze howitzer, captured at Chapultepec.	2	4.5-inch Blakely cast and wrought iron guns, rifled, captured at Fort Pulaski, Ga.
1	4-pounder bronze howitzer, captured at Chapultepec.	2	42-pounder carronades, captured at Port Royal Harbor, South Carolina.
1	4-pounder bronze gun, captured at City of Mexico, caliber 3.3.	1	80-pounder Whitworth gun, captured on blockade runner near Charleston, S. C.
1	4-pounder bronze gun, captured at City of Mexico, caliber 3½ inches.	1	7-inch Brooks cast-iron rifle, captured at Charleston Harbor, South Carolina.
1	12-pounder bronze gun, captured at City of Mexico, caliber 4.7.	1	10-inch columbiad cast-iron S. B. gun, captured at Charleston Harbor.
1	4-pounder bronze howitzer, captured at Huamantla.	5	12-pounder brass field guns.
		1	3-inch cast-iron rifled gun.
		1	6-pounder bronze S. B. field gun, captured at Nashville, Tenn.
		1	6-pounder Blakely steel rifled gun, captured at Salisbury, N. C.
		1	George cast-iron S. B. gun, caliber 1½ inch.
		1	3.7-inch Blakely steel rifled gun.
		1	1.9-inch small bronze breech-loading gun.
		1	3.67-inch steel or wrought iron gun.
		1	3.45-inch cast-iron rifled gun.

List of trophy guns, etc.—Continued.

Num-ber.	Gun, etc.	Num-ber.	Gun, etc.
	TROPHIES FROM 1861 AND 1865—continued.		TROPHIES FROM 1861 AND 1865—continued.
1	8-inch cast-iron rifled gun.	1	4-pounder cast-iron gun. This gun fired the first shot of the rebellion at the steamer Silver Wave, at Vicksburg.
1	3-inch Armstrong cast-iron rifled gun.		
1	900-pounder Blakely cast-iron rifled gun-burst at Charleston Harbor, South Caro, lina.	1	3-inch wrought-iron rifled gun. This gun fired the last shot of the rebellion. It belonged to Captain Elder's, Battery B, First United States Artillery.
1	3-inch Whitworth breech-loading steel rifle.		

BUILDINGS, GROUNDS, AND LIGHTS.

Committee on buildings, grounds, and lights.—Messrs. REDFIELD PROCTOR, ALEXANDER MACKAY-SMITH, and EDWARD C. WALL.

Your committee on buildings, grounds, and lights beg leave to report that after an investigation of the recommendations of the Superintendent in regard to appropriations for buildings and other improvements, while recognizing the necessity at some future day of all he asks for they regard it as inexpedient, in view of the financial depression which prevails throughout the country, for the Board to concur at present in all of his recommendations, but to confine its approval to those that appear to be imperatively necessary at present.

Your committee therefore recommend the appropriation of \$40,000 for the five sets of officers' quarters, costing \$8,000 each, and an appropriation of \$17,000, in addition to any former appropriations, for completing the reservoir.

Your committee also recommends that at some future time, and as soon as practicable, an appropriation of \$35,000 be made for the erection of a tower on the Academy building, without which it can never be considered as completely and creditably finished.

REDFIELD PROCTOR, *Chairman.*

ALEXANDER MACKAY-SMITH.

E. C. WALL.

SUPPLIES AND EXPENDITURES.

Committee on supplies and expenditures.—WILLIAM H. HATCH, JOHN D. CRIMMINS, and THOMAS F. EDMANDS.

The supplies and expenditures for cadets are under the charge of the right man in the right place, Capt. William F. Spurgin, Twenty-first Infantry, who has very properly been retained in his position much longer than the ordinary term for the detail of officers at the Military Academy. He knows his business, and does it in a manner which the committee investigating his department desires especially to commend.

In his department there are three divisions, viz, the store, the laundry, and the mess.

At the store are located the countingroom, where disbursements are made; the supply room, from which the cadets obtain all their supplies except food, and the tailor's workroom. The system of accounts with each cadet is so complete that his exact standing with the treasurer can be seen at a glance. The articles that the cadets may obtain from the supply room are charged to him substantially at cost, which is the wholesale price for large quantities. All garments worn by the cadets, except underclothing, are made in the tailor's shop, under Captain Spurgin's direction.

The laundry is admirably managed. As an instance of the business-like methods employed in its administration, the committee found that all the soap used therein is made on the spot from grease obtained by rendering the refuse fat from the mess hall kitchen. Formerly the cadets were charged for the washing done for each, but now the entire cost of washing is averaged and each cadet is charged alike.

The administration of affairs at the mess hall excited the admiration of the committee. The food is of the best quality that can be obtained, there is plenty of it, and it is excellently served. In providing if there is a wise recognition of the fact that it is to sustain young men, many of whom are in effect growing boys, whose appetites are stimulated by constant vigorous exercise, and whose bodies must endure physical and mental strain for an extended period of their lives. These young men get three hearty meals a day at an average cost of about 52 cents for the three.

The kitchen should be enlarged. The floor of the mess hall, now of wood, should be of tile or stone mosaic laid in cement.

The committee in every part of Captain Spurgin's department found neatness, system, and economy, resulting from the application of business sagacity and good sound common sense.

WILLIAM H. HATCH, *Chairman.*

JOHN D. CRIMMINS.

THOMAS F. EDMANDS.

FISCAL AFFAIRS.

Committee on fiscal affairs.—Messrs. JOHN D. CRIMMINS, GEORGE H. CRAIG, and REDFIELD PROCTOR.

The committee on fiscal affairs have completed their personal inspection of the affairs of Maj. W. F. Spurgin, treasurer of the Academy and quartermaster and commissary of cadets, as well as of the affairs of Capt. W. H. Miller, assistant quartermaster and disbursing officer of the Academy. The methods and accounts have been fully explained, and your committee are enabled to make a fair report on the administration of these two important departments.

Major Spurgin supervises the mess and cadet stores and the administration of the laundry department; also the accounts of the cadets. We found in each department a perfect system of good order and complete accounts, all administered on the most economical and business-like plan. It would be difficult to say which of the numerous duties that this good officer conducts is the most to be commended without probably encroaching upon the work of the committee on supplies and expenditures for cadets, as your committee could not have separated their work in the examination of the fiscal affairs without becoming familiar with supplies. They beg leave to mention the satisfactory purchases and quality of food and material made for the account of the cadets. The committee were shown the methods for banking the moneys in the hands of the treasurer and the manner of checking the accounts of the cadets, and it is only necessary to say we commend the order, as well as the system.

The committee further report that they have made an examination of the books and accounts of Capt. W. A. Miller, disbursing officer of the post. The appropriations made for the support of the Military Academy include numerous items for buildings and grounds. The moneys are deposited to Captain Miller's account with the United States treasurer in New York City, and all accounts are paid by check. Frequent examinations are made by the duly authorized inspector from the War Department, as well as the Quartermaster-General's Department. The accounts are kept in so simple a manner that your committee could at a glance determine on their completeness.

The expenditures against each appropriation are kept under their respective heads, so that the balance to each account could be obtained

and the aggregate of the balances compared with the money on deposit and the general account balanced.

Captain Miller supervises the work of repairs, and the committee commend his practical value in this work.

Your committee, in their further examination, fear again that matter has suggested itself to them that might more appropriately be in the province of the committee on buildings, grounds, and lights. As your committee have had no means to learn what that committee may have in mind, as the work of the board is one, they would call the attention of the committee on buildings, etc., to the necessity of a new system of drainage for the ground floor of Grant Hall, or what is better known as mess hall, as well as a new flooring of tile or Portland cement; also the enlargement of the kitchen, which is of the same dimensions as when constructed in 1850. A tile floor for the mess room is very important. The area wall in rear of the building should be rebuilt, and at a greater distance from the building, so that better ventilation and light might be secured. The committee attach herewith the tabulated report of Major Spurgin and Captain Miller.

Your committee would again refer to the very efficient and economical administration of these two departments.

Very respectfully,

JOHN D. CRIMMINS, *Chairman.*

GEORGE H. CRAIG.

REDFIELD PROCTOR.

OFFICE TREASURER UNITED STATES MILITARY ACADEMY,
QUARTERMASTER AND COMMISSARY OF CADETS,
West Point, N. Y., June 7, 1894.

SIR: I have the honor to acknowledge the receipt of your communication of the 5th instant, and in reply thereto to transmit herewith the statement of the treasurer United States Military Academy, May 15, 1893, which was the last settlement of the books of this office prior to the inspection of the same by the committee on fiscal affairs, Board of Visitors, 1893; a statement of the receipts and expenditures under the different accounts kept in this office from May 15, 1893, to May 21, 1894, the date of the last settlement and statement of May 21, 1894.

Very respectfully, your obedient servant,

W. F. SPURGIN,
*Captain, 21st Infantry, Treasurer Military Academy,
Quartermaster and Commissary of Cadets.*

Hon. JOHN D. CRIMMINS,

Chairman Committee on Fiscal Affairs, etc.

(Through headquarters United States Military Academy.)

Statement of the treasurer United States Military Academy, May 15, 1893

Assistant treasurer	\$34, 557. 99	Athletic Association.....	\$222. 75
Balances paid.....	157. 28	Cadet hospital.....	182. 97
Cadet cash.....	98. 00	Cadet laundry.....	4, 280. 11
Dentist	135. 00	Cadet quartermaster.....	10, 333. 81
Trust funds.....	20, 000. 00	Cadet subsistence department	1, 054. 55
Cash on hand	873. 65	Corps of cadets	11, 381. 42
		Deposits	200. 00
		Young Men's Christian Association..	14. 94
		Dialectic Society.....	26. 85
		Equipment fund	28, 100. 00
		Miscellaneous fund	24. 52
Total.....	55, 821. 92	Total.....	55, 821. 92

Statement of receipts and disbursements made by the treasurer United States Military Academy during the period May 15, 1893, and May 21, 1894, date of last settlement.

Disbursements.		Receipts. .	
Assistant treasurer.....	\$161, 785. 15	Assistant treasurer.....	\$161, 977. 32
Athletic Association.....	1, 434. 30	Athletic Association	1, 304. 81
Balances paid	17, 225. 93	Balances paid.....	17, 383. 21
Barber.....	594. 15	Barber.....	594. 15
Cadet cash	15, 178. 65	Cadet cash.....	15, 201. 65
Cadet hospital	2, 527. 54	Cadet hospital	2, 344. 57
Cadet laundry	9, 894. 62	Cadet laundry	7, 190. 32
Cadet quartermaster.....	66, 691. 53	Cadet quartermaster	69, 405. 77
Cadet subsistence department	61, 138. 35	Cadet subsistence department.....	60, 843. 64
Confectioner	226. 00	Confectioner.....	226. 00
Corps of cadets	190, 883. 38	Corps of cadets.....	188, 775. 63
Damages, ordnance .....	. 35	Damages, ordnance .....	. 85
Dancing.....	515. 55	Dancing	515. 55
Dentist	986. 00	Dentist	1, 011. 00
Deposits	18, 064. 03	Deposits.....	18, 568. 08
Dialectic Society.....	654. 65	Dialectic Society	708. 12
Equipment fund	11, 540. 00	Equipment fund.....	13, 862. 00
Expressage	42. 76	Expressage	42. 76
Gas fund.....	1, 244. 76	Gas fund.....	1, 244. 76
Hops and german.....	1, 587. 41	Hops and german	1, 516. 83
Miscellaneous fund	33. 85	Miscellaneous fund	23. 61
Miscellaneous items.....	247. 08	Miscellaneous items.....	247. 08
Oath	26. 50	Oath	26. 50
Paymaster	162, 145. 15	Paymaster	162, 145. 15
Periodicals.....	50. 25	Periodicals	50. 25
Photographer	6. 00	Photographer.....	6. 00
Policing barracks.....	5, 472. 19	Policing barracks.....	5, 472. 19
Young Men's Christian Association.	175. 46	Young Men's Christian Association.	175. 20
Total.....	730, 371. 65	Total.....	730, 852. 44

Statement of the treasurer United States Military Academy, May 21, 1894.

Assistant treasurer.....	\$34, 365. 82	Athletic Association.....	\$93. 20
Cadet cash.....	75. 00	Cadet laundry	1, 575. 81
Dentist	110. 00	Cadet quartermaster.....	13, 048. 05
Hops and german.....	70. 58	Cadet subsistence department	759. 83
Trust funds.....	20, 000. 00	Corps of cadets	9, 273. 67
Cash on hand	1, 364. 44	Deposits	704. 00
		Young Men's Christian Association.	14. 68
		Equipment fund	30, 422. 00
		Dialectic Society.....	80. 33
		Miscellaneous fund.....	14. 28
Total.....	55, 985. 84	Total.....	55, 985. 84

The equipment fund will be reduced on settlement with the graduating class of this year by the sum of \$10,512.
Respectfully submitted.

W. F. SPURGIN,
Captain 21st Infantry, Treasurer United States Military Academy.

UNITED STATES MILITARY ACADEMY,
QUARTERMASTER'S OFFICE,
West Point, N. Y., June 7, 1894.

SIR: In accordance with your request I have the honor to inclose herewith, for the information of the Board of Visitors, abstracts pertaining to money accountability, viz:

Appropriations for the support of the United States Military Academy.

Special contingent fund United States Military Academy.

Very respectfully, your obedient servant,

W. H. MILLER,
*Captain and Asst. Quartermaster U. S. A.,
Disbursing Officer U. S. Military Academy.*

Hon. JOHN D. CRIMMINS,
Chairman subcommittee Board of Visitors on Fiscal Affairs.
(Through headquarters United States Military Academy.)

Abstract of receipts and expenditures pertaining to the special contingent fund United States Military Academy between July 1, 1893, and June 5, 1894.

On hand July 1, 1893	\$1, 298. 97
Receipts:	
By rent of West Point Hotel.....	\$2, 000. 00
By rent of post-office cottage.....	112. 50
By rent of public stables.....	75. 00
By rent of confectionery store (retiring house)	350. 00
By transfer of balance on hand July 1, 1893, of the United States Military Academy gas fund.....	511. 62
By sale of coke	711. 47
By sale of coal tar	546. 00
By sale of gas and gas fixtures to officers	2, 029. 24
By sale of gas to civilians.....	571. 73
By sale of gas to public buildings.....	653. 51
By sale of gas and gas fixtures to cadets.....	1, 244. 76
By sale of old iron.....	290. 92
By sale of old lead.....	342. 74
By sale of old copper and brass	145. 08
By sale of old lime barrels	5. 00
	<u>9, 589. 57</u>
Total	10, 888. 54
Expended, to include June 5, 1894	8, 257. 72
	<u>2, 630. 82</u>
Balance on hand June 5, 1894.....	

I certify that the above abstract is correct, and that the expenditures reported have all been made upon vouchers approved by the Superintendent United States Military Academy.

W. H. MILLER,
*Captain and A. Q. M., U. S. Army,
Treasurer Special Contingent Fund U. S. Military Academy.*

Abstract of appropriations made for the support of the United States Military Academy, received and disbursed by Capt. W. H. Miller, assistant quartermaster, United States Army, disbursing officer United States Military Academy, for the period commencing July 1, 1893, and ending June 6, 1894.

REGULAR APPROPRIATIONS.

	Current and ordinary expenses.	Miscella- neous items and inci- dental ex- penses.	Buildings and grounds.
<i>Fiscal year 1892.</i>			
On hand July 1, 1892	\$971. 64	\$97. 58	.....
Received since .....	.....	.....	.....
Total.....	971. 64	97. 58	.....
Expended.....	19. 58	7. 50	.....
Unexpended balance on hand	952. 06	90. 08	.....
<i>Fiscal year 1893.</i>			
On hand July 1, 1893	11, 772. 83	2, 945. 85	\$25, 318. 14
Received since	10. 00	.....	46, 496. 00
Total.....	11, 782. 83	2, 945. 85	71, 814. 14
Expended.....	6, 100. 87	2, 805. 05	67, 718. 74
Unexpended balance on hand	5, 681. 96	140. 80	4, 095. 40
<i>Fiscal year 1894.</i>			
On hand July 1, 1894 .....	.....	.....	.....
Received since	69, 000. 00	22, 000. 00	56, 000. 00
Total.....	69, 000. 00	22, 000. 00	56, 000. 00
Expended	55, 114. 13	21, 999. 53	40, 946. 32
Unexpended balance on hand	13, 885. 87	. 47	15, 053. 68
<i>Fiscal year 1893-94.</i>			
On hand July 1, 1893	600. 00	2, 470. 92	.....
Expended	357. 00	1, 189. 62	.....
Unexpended balance on hand.....	243. 00	1, 281. 30	.....
<i>Deficiency appropriation, 1893.</i>			
On hand July 1, 1893	200. 00	.....	.....
Expended	200. 00	.....	.....

SPECIAL APPROPRIATIONS.

[Acts approved February 12, 1889.]

	New aca- demic building.	New gym- nasium.
On hand July 1, 1893	\$11, 153. 93	\$12, 241. 66
Received since	135, 000. 00	.....
Total	146, 153. 93	12, 241. 66
Expended	109, 029. 42	599. 69
Unexpended balance on hand.....	37, 124. 51	11, 641. 97

I certify that the above abstract is correct, and that the expenditures stated have been made by me on vouchers approved by the Superintendent of the United States Military Academy.

W. H. MILLER,
Captain and Assistant Quartermaster, United States Army,
Disbursing Officer United States Military Academy.

WEST POINT, N. Y., June 7, 1894.

HYGIENE AND ATHLETICS.

Committee on hygiene and athletics.—Messrs W. W. KEEN, JOHN C. BLACK, and JOHN J. DAVIS.

The committee have carefully inspected the reservation and its buildings, especially the plumbing and drainage of each and of the entire post, the water-closets and bathrooms, the hospitals, the gymnasium and its system of instruction, the question of athletic sports, the water supply, and the general condition of the health of the entire command.

As a result they feel that they can commend in the highest degree the sanitary conditions prevailing at West Point. No better proof of this can be given than that in a command exceeding thirteen hundred in number not a single case of typhoid fever, diphtheria, or other disease due to a want of good sanitation or arising by direct infection occurred during the entire academic year, ending September last. The location of the post is an exceptionably favorable one. While there is an extensive plateau, suitable for military maneuvers, the bulk of the reservation is on the sides of beautiful mountains which are as pleasing to the esthetic sense as the location is favorable to the best sanitary conditions.

The river affords the most exquisite views, surpassed by none among the most beautiful rivers of Europe. At the same time, its waters being salty, and having a tidal rise and fall of about three feet, afford excellent means of drainage, without any noxious influence upon cities situated lower down upon its banks. While sufficiently near to large towns and the city of New York for convenient access—a great advantage both in a social and a military sense—the isolation of the reservation shields it from any danger from those contagious and infective diseases incident to all populous centers.

It is, however, always possible that cases of scarlet fever, smallpox, diphtheria, and other similar contagious diseases may be imported and might cause serious outbreaks of such disorders. The periodical inspection of all persons at the post by the medical officers, and their vaccination or revaccination, in case of evidence of insufficient protection, we are informed, is rigidly carried out and will protect the command, except in possible accidental and sporadic cases. But scarlet fever, diphtheria, etc., especially among the children at the post and the young men who may not be protected by a previous attack of scarlet fever, can not be fully guarded against. The present hospitals, either for the cadets or the enlisted men, can not afford the prompt and effective isolation of such cases by which the spread of the disease

may be quickly checked without danger that the other occupants of such hospitals may themselves contract such disease, and that they may be spread more widely through the necessary and nonisolated attendants. Hence the committee recommend that a small hospital for contagious diseases be provided at a cost of about \$2,500.

The water supply, as pointed out in the annual reports by the Superintendent and the post surgeon, needs careful attention. The appropriation bill for the Military Academy, which has already passed the House and is pending in the Senate, appropriates \$25,000 for increasing the capacity of the reservoirs in order to avoid the short supply always experienced during the summer drought, and for cleaning them. One of them has not been drained for fifteen years. The Superintendent has informed us that to accomplish the ends in view in a proper and effective way will require \$17,000 more, or \$42,000 in all. There is no more important adjunct to health than a pure and abundant water supply. The committee, therefore, urge that the recommendation of the Superintendent be carried out and that the additional appropriation of \$17,000 asked for be approved.

The various water-closets and facilities for bathing have been carefully examined. On the whole, the entire post has the best facilities in both of these respects. The water-closets, urinals, and bath tubs for the enlisted men and cadets are of the same pattern, and in number and quality leave nothing to be desired. Exceptions, however, exist in the cadets' bathrooms and the gymnasium. In the former there are ten bathrooms without tubs. The four "needle" baths in the bathroom building are uncompleted and therefore can not be used, and there are no "needle" baths in the gymnasium. In the pending appropriation bill all these deficiencies are provided for, and the committee warmly approve of the additions.

In the Superintendent's report the unsanitary condition of the ten wooden houses occupied by soldiers' families in "Logtown" is referred to. The committee visited these houses and found them old, unsightly, and unwholesome. The cellars, especially, are low and damp, in some cases covered with a layer of water, and in the winter and spring must be in a much worse and more unwholesome condition. The committee approve of the Superintendent's suggestion that new quarters be erected upon a high and healthy site, and that the old buildings be then removed, and urge that the appropriation asked for this purpose be granted.

The committee visited the cadets' barracks and mess hall and took unexpected meals with the cadets. In the barracks the only recommendation of the committee is that inclined tops be provided for the study tables. So much time is devoted to study, drawing, and writing during the four years spent here that everything conducive to the preservation of the best eyesight is of the highest importance. Though the cadets are admitted after a most rigid physical examination,

including careful tests of the eyesight, the committee are impressed with the considerable proportion of the cadets who need to wear glasses.

It has been conclusively shown by oculists in various countries that the number of pupils in schools and universities requiring artificial aids to sight increases progressively from the lowest to the highest grades with serious rapidity. In army officers this may become a grave defect, especially in the field, where repairs to glasses and new glasses can not be had. The post surgeon has furnished us with the following table, showing the serious effects upon the eyesight of the cadets such that nearly one-fifth of them have required the aid of glasses. This arises chiefly from the continued eye strain from reading, writing, and drawing. We are glad to learn that in many if not in most cases, when the cadets leave the Academy and are relieved of this incessant near use of the eyes, they are able to discontinue the use of their glasses. It is still more important, however, to avoid those conditions which have made such use of glasses needful.

WEST POINT, N. Y., *June 7, 1894.*

DEAR SIR: In compliance with your verbal request I herewith inclose a comparative statement, by years, of cases of impaired vision, due mostly, if not exclusively to eye strain, occurring in the United States Corps of Cadets from June 1, 1890, to June 1, 1894, together with the average strength of the corps, by years, for the same period.

So far as the records of this hospital show, eye examinations were begun and prescriptions for glasses first made by medical officers at the Academy in 1890. I am informed that prior to that cadets requiring artificial correction of visual defect consulted specialists in New York City.

Very respectfully, your obedient servant,

P. F. HARVEY,

Major and Surgeon, U. S. A., Post Surgeon.

Prof. W. W. KEEN, M. D.,

Chairman of the Committee on Hygiene and Athletics, etc.

Cadets at the United States Military Academy treated for eye strain for the periods:

June 1, 1890, to June 1, 1891.....	27
June 1, 1891, to June 1, 1892.....	73
June 1, 1892, to June 1, 1893.....	49
June 1, 1893, to June 1, 1894.....	• 38

Average strength of the United States Corps of Cadets:

June 1, 1890, to June 1, 1891.....	257.52
June 1, 1891, to June 1, 1892.....	252.45
June 1, 1892, to June 1, 1893.....	257.97
June 1, 1893, to May 1, 1894 (11 months)	283.04

Or a percentage in—

1890-91	10.5
1891-92	29
1892-93	19.1
1893-94	13.4

An average of 18 per cent for the four years.

The committee are glad to observe that the insufficient light in the barrack study room—one of the most fertile causes of defective vision—frequently alluded to by previous Boards of Visitors, has been remedied. They urge that every other possible cause producing decreased acuteness of sight should be carefully eliminated. Among these the substitution of inclined instead of horizontal tops for the study tables and the preservation of a proper distance of the eye from the book or paper—thirteen inches—are important and practicable. The former can easily be provided by the Academy, but the latter can only be obtained by the personal cooperation of the cadets themselves. The committee therefore urges upon the cadets most rigidly to avoid stooping or bending over their desks, and thus avoid the production of near-sightedness and other defects and diseases which are at once a discomfort and a danger; and that from time to time the post surgeons direct the attention of the cadets to the danger and its simple and efficient remedy.

In the mess hall the committee, at the very threshold, were struck by the disagreeable odor arising from the soap and water and food-soaked wooden floor, in spite of the fact that the doors and windows were open. They heartily approve, therefore, of the pending appropriation for a tile floor in the mess hall. The food was excellent, and so far as they could learn by inquiry from cadets and others was sufficiently varied and of good quality. In reply to verbal and written inquiries, the following communications were received in relation to instruction in hygiene:

UNITED STATES MILITARY ACADEMY,
SURGEON'S OFFICE, CADET HOSPITAL,
West Point, N. Y., June 3, 1894.

DEAR SIR: In compliance with your verbal request I take pleasure in submitting the following remarks upon the desirability of instituting at West Point a course of instruction in military hygiene and in methods of rendering immediate aid to the wounded:

The extreme importance of this instruction in military life is so generally conceded that medical officers are required by regulations to teach the private soldiers of the line how to aid the sick and wounded and transport them. But the full measure of usefulness of sanitation to the Army can not be exerted until those who command understand the fundamental principles of hygiene and appreciate their importance.

Military hygiene is not a new science. Its beginnings are to be found in the dawn of medicine; but notwithstanding its established importance in the promotion of military efficiency, the combatant officer of our Army has never been taught to regard it as a necessary part of his military education. He is instructed in law, chemistry, mineralogy, geology, philosophy, French, Spanish, drawing, astronomy, and other sciences more or less opposite to the profession of arms, but there has never been any serious attempt made to teach him the practical principles of sanitary science even in their elementary form, so that he will understand what is necessary to do to preserve the health of his command and keep it at its highest state of effectiveness. He is taught the duties of every other staff corps of the Army, but remains ignorant, unless self-taught, of the art of fighting the most deadly enemy of armies—disease.

One who commands should know the rationale upon which opinions and actions are based in all departments of his command. Ignorance in any particular endangers proportionally his ability to exercise an intelligent supervision over all.

If it is acknowledged that this instruction is a necessary part of the education of an army officer, the proper time to instill it is during the academic course, when one instructor will suffice. If postponed for a post-graduate course there would have to be four instructors at least, one each at the infantry, cavalry, artillery, and engineer schools.

Disease has always claimed three to ten times more victims in war than the shot and shell of the enemy. To-day in our little Army there are 500 men constantly sick and noneffective from preventable diseases.

Although medical officers have struggled valiantly with the problem of sanitation, they need the intelligent assistance of their nonmedical brethren of the line to attain the perfect results they so ardently desire.

At the Naval Academy a chair of hygiene and first aid was established some years ago, Surgeon Beyer holding this chair and supervising also the physical training of the cadets. The instruction has been productive of the most satisfactory results. Throughout the civilized world the importance of this instruction is being recognized, and its benefits in every direction can not be overestimated.

I should think a sufficient practical knowledge of hygiene and first aid could be given to the first class at the Military Academy, to which class this instruction might be confined, in twelve lessons of an hour or so each. It is believed that the present course might be so arranged as to easily admit of this slight addition.

The essential subjects to be considered would be: (1) The soldier, his training, food, clothing, and shelter; (2) the diseases and injuries to which soldiers are especially liable; (3) the hygiene of barracks and quarters, and of camps and troops in the field, and (4) the immediate aid and transportation of sick or injured officers and men.

In the British army the medical officers supervise the amount and kind of gymnastic exercises, and it would seem that such an arrangement is best adapted to accomplish the end in view. A knowledge of the human body in health and disease, the symptoms which indicate organic defects and the training required to best overcome them, is a part of the equipment of all medical officers.

The present course of gymnastics at the Academy is an excellent one, and it is believed that the relation to this department of the medical officer need only be an advisory one and confined to the giving of professional opinions concerning the existence of organic defects, so as to put the instructor on his guard in cases of possible danger from violent exercises.

If the Board of Visitors is favorable to the introduction of this course, it would seem that it should be intrusted to an officer of the Medical Corps as best equipped to teach it, and it is respectfully suggested that a medical officer on duty at the Academy could take charge of it provided, he were relieved of some of his present duties while engaged in delivering the course.

I am, dear sir, very respectfully, yours,

P. F. HARVEY,

Major and Surgeon, United States Army, Post Surgeon.

Dr. W. W. KERN,

Chairman of Committee on Hygiene and Athletics, etc.

WEST POINT, N. Y., June 5, 1894.

SIR: In reply to your communication of this date in regard to the number of recitations in hygiene which were had in my department, I have to state that eleven recitations were given to the subject-matter contained in Tracy's Anatomy,

Physiology and Hygiene. I assume that your question has reference to the above named book. Six of the above number were advance lessons, the others review.

It may be pertinent to add that many principles of hygiene are taught in other parts of my course, both from the text and by lecture, as heating, ventilating, disinfectants, and the proper sites for camps, etc.

Very respectfully,

S. E. TILLMAN,

Professor Chemistry, etc., U. S. Military Academy.

Hon. J. J. DAVIS,

Secretary Committee Hygiene and Athletics.

In addition to these letters the committee held conferences with the Superintendent, Colonel Ernst, and the medical officers of the post, Drs. Harvey and Reynolds, and others. The Superintendent, Colonel Ernst, was opposed to the views of Surgeon Harvey, as indicated both verbally in his conference with the committee and by the following letter :

WEST POINT, June 6, 1894.

SIR: I have the honor to acknowledge receipt of your favor of the 4th instant, transmitting a letter addressed to your committee by the post surgeon, and a copy of a resolution adopted by the committee inviting me to meet the committee on the following morning. Owing to a pressure of duties and the shortness of the interval, I was unable to make a written reply to your letter before the meeting. My views upon the general subject of the letter were given to the committee at the meeting, and are opposed to those of the post surgeon.

The letter is herewith returned.

Very respectfully, your obedient servant,

O. H. ERNST,

Colonel of Engineers, Supt.

Hon. J. J. DAVIS,

Secretary Committee on Hygiene and Athletics, etc.

It would appear that the entire instruction in this important branch is limited to six advance lessons (with five review), together with incidental allusions to various sanitary subjects by the professors of chemistry, engineering, etc. One lecture we learn was given also by one of the medical officers last winter on first aid to the wounded. This very brief course, while of value, seems to the committee to be wholly inadequate to the proper instruction of officers who are to have the care of the lives and health of thousands of men.

The mere rudiments of anatomy, physiology, and hygiene in relation only to their personal health can not be acquired by the cadets in so short a course; and when to these are added the important questions of the proper or improper feeding, clothing, housing, and training of the soldiers in peace and during the exigencies of war, the prevalence and prevention of disease, which makes far greater inroads upon the effective military strength of an army than do the shot and shell of the enemy, and the complicated problems of the effective yet practicable sanitation of barracks and camps, thorough instruction in this department is seen to be not only desirable, but urgent, and in fact necessary. Though some instruction is given in sanitation at posts of instruction after graduation, yet so far as the committee can learn there is no complete course given at any of these posts, nor is it given at each of such

post-graduate schools, nor are all of the cadets invariably after graduation sent to one of these. Here is the only place at which all of them can acquire any knowledge of this subject of vital importance to the Army, especially when in actual service.

The sanitation of armies during war is not merely a medical question. However desirable the medical requirements may be military necessities may make it needful to disregard them, even at serious risk to the health of the Army. But in probably the majority of cases this is not true, and when not so the importance of the proper location and sanitation of camps and barracks and of those medical precautions which may be highly conducive to the health and therefore to the success of an army should be fully understood by the officers of the staff and line, so that they may appreciate their stringent necessity and act in accordance with them instead of inviting disaster by their violation. This violation will be none the less injurious or even fatal to the military success of an army because it is committed unintentionally and purely from ignorance of the laws of health, for these laws require obedience and enforce their own penalties as rigidly as the laws governing military operations themselves.

In addition to this it needs no argument to convince any intelligent man of the importance of every soldier and officer knowing how to render effective first aid to the injured and wounded, especially in an occupation one of whose chief objects and dangers is the infliction and reception of such wounds and injuries. In fact, in the past, especially in small commands on duty without a medical officer, most valuable lives actually have been lost to the Army and the country for the want of exactly such knowledge. Instruction in first aid is given with reasonable fullness to the soldiers at this command, as each of them serves in turn as a company bearer. Prospective officers should certainly be as well instructed as their men, and if possible better.

Instruction in anatomy, physiology, and hygiene is technical, and in the opinion of the committee should be given by the senior medical officer of the post, as the surgeons are the only officers who are fully fitted for these duties. In the Naval Academy such a chair has been established and is filled by a surgeon, and the Army should not be behind the Navy in this important practical as well as scientific study. In response to an inquiry by the committee the following letter was received from Dr. Beyer giving a résumé of his course and the examination questions, both of which impress the committee most favorably.

BRANCH OF PHYSICAL TRAINING, NAVAL ACADEMY,

Annapolis, Md., June 6, 1894.

SIR: I have the honor to acknowledge your letter of June 4, requesting me to furnish you with some information with regard to the course of physiology and hygiene given at this Academy.

The course begins with several lectures on general biology for a foundation and intended to give the cadets some elementary ideas of "living things." Anatomy and physiology are next taken up; the instruction is also given in the form of lectures with practical demonstrations. The text-book used is Martin's Human Body.

After the cadets have acquired a sufficient amount of knowledge of living things and the human body, lectures on general hygiene are introduced, gradually leading up to the special branches of hygiene concerning naval and military operations. Finally every cadet is taught the principles and practice of First Aid to the Injured, embodied in a book with this title published by the Naval Institute here in 1892, from which copies can still be obtained. In all there are about thirty lectures delivered during the year, and the examinations are held at the end of each month in writing. The instruction is made as practical as can be done, and a copy of the questions of the last written examination is herewith inclosed.

It is also an important part of this branch to systematize and supervise the gymnastic drills. Numerous short addresses are given the cadets in the gymnasium during their exercises; they are instructed in the use of every special piece of apparatus in order to enable them to use the apparatus with the best possible advantage to themselves. Any cadet needing special development in certain parts receives special attention to insure perfect symmetry of growth. Repeated measurements are made and progress is noted.

I feel that my account is imperfect and must be so, since it is impossible to put everything on paper having a bearing on the subject. I consider this department an important one, and am thoroughly interested in the work. If you could conveniently stop at the Academy for a short time I would gladly show you much more

Respectfully,

HENRY G. BEYER,
Surgeon in Charge of Branch.

Dr. W. W. KEEN,
Chairman Committee on Hygiene, West Point, N. Y.

UNITED STATES NAVAL ACADEMY, BRANCH OF PHYSICAL TRAINING.

Examination in physiology, February 24, 1894.

1. Define biology and its subdivisions.
2. Mention the distinctive properties of living matter.
3. Describe the cell and its constituent parts.
4. How do cells multiply? Describe the process.
5. What is morphology?
6. Name, and define three of the functions of living matter.
7. Enumerate the bones belonging to the "appendicular skeleton."
8. Describe a typical dorsal vertebra.
9. Describe the humerus.
10. Give a general description of an articulation.
11. Describe the hip joint in detail.
12. What are ciliated cells, and where found?
13. Mention the properties of muscular tissue.
14. Give a general description of an ordinary skeletal muscle.
15. Give the origin and insertion of the biceps.

Examination in physiology and hygiene, March 23, 1894.

1. Describe the heart and its valves.
2. Name and place the principal arteries.
3. Give the function of the red blood corpuscles.
4. What is the pulse due to? Give and describe tracing.
5. Describe the lymphatic system of vessels and glands.
6. Mention the principal muscles of respiration.
7. Define the thoracic and abdominal types of respiration.
8. Give the minute anatomy and function of the skin.
9. What is the function of the kidneys?

10. What is the influence of nicotine on the blood and its various constituents?
11. What will be the probable influence of the new small-arm rifle and projectile on the death rate of future battles?
12. Why will deaths from hemorrhage in the field occur more frequently than formerly?

Examination in physiology and hygiene, April 27, 1894.

1. Give the chief divisions of the nervous system.
2. Describe the typical brain cell.
3. Give the minute anatomy of a nerve cord.
4. Describe the origin of a spinal nerve.
5. How are nerves divided according to function?
6. Explain reflex action.
7. Name the active principle of saliva; give its action.
8. Name and describe the different glands of the stomach.
9. Give the chief constituent of gastric juice.
10. What are the peptones?
11. Describe the mucus layer of the duodenum.
12. Where and how is digested food absorbed and passed on into the blood?

Examination in physiology, May 25, 1894.

1. Trace the complete digestion of a simple meal consisting of carbohydrates, proteids, and fats.
2. Give the acute and chronic effect of alcoholic beverages.
3. What are bacteria and how are they classified?
4. Describe one of the methods of sterilizing the skin.
5. How is sea water to be prepared before it can be made potable through distillation?
6. Describe the manual and instrumental methods of compressing the femoral artery in cases of hemorrhage.
7. How would you treat a poisoned wound?
8. Tell how to resuscitate an apparently drowned man.
9. Treat a case of unconsciousness occurring in fire room.
10. State how to distinguish apparent from real death.

After careful consideration, especially of the objections urged by Colonel Ernst in his interview, the committee recommend that a chair of anatomy, physiology, hygiene, and first aid to the injured be established at West Point; that it be filled by the senior surgeon; that his duties should include the supervision of all athletics, and that his course should cover thirty lessons and demonstrations at the least.

Our conference with the Superintendent as well as our investigation of the course of study impressed us, however, with the fact that as arranged at present it will be difficult to find time for increased instruction in this branch without injuring the health of the cadets, except by curtailing to some extent the instruction given in some of the other departments. The committee therefore would recommend that the eleven recitations now held by the professor of chemistry in this department be given to the proposed chair of anatomy, etc. They are inclined also to think that however, desirable, the study of mineralogy and geology is not so directly concerned in army life and health as the proposed studies, and that the necessary time for the proposed course in hygiene, etc., could be secured by slightly curtailing the course in these departments, unless the academic board should think it better to retrench in

other departments of study. The subject is so obviously desirable and indeed imperative that we feel that these administrative details may surely be left to the Superintendent and the academic board to be carried out.

In the athletic department it is to be remembered that exercise *per se* is a part of the entire course. The cavalry drill, alike in the school of the troop and of the trooper, excited our admiration, both as a military operation and a capital physical exercise. The same may be said of the daily infantry drill, the sword exercise, and fencing. But only the systematic examination, measurement, and testing of each man will reveal accurately wherein he excels and wherein he lacks, and prescribed gymnastic exercise will repress the excess in one direction and remedy the deficiency in another. The universal testimony to the great efficiency of Mr. Koehler, who at present is in charge of such gymnastics, has given much pleasure to the committee. Exercise in the gymnasium as a prescribed course is limited to the first year in the Academy, and has produced admirable results. Unless found impracticable, we would recommend that such exercise should extend through the entire four years. We would especially urge also that, as at the Naval Academy, the Sargent or other similar system of measurements, records, and athletic prescriptions be introduced, so that each man may be brought up to the maximum of physical development, especially in directions in which he may be defective, which can only be determined by such a system.

The committee are glad to note that, in common with most college presidents who have investigated the matter, the Superintendent is convinced that athletic sports and games are conducive both to scholarship and discipline, and they are of the opinion that such pastimes should be encouraged to the utmost, both for recreation and health. The Superintendent and post surgeon have, however, called attention to the frequency and serious nature of the accidents arising in football. The following tables, prepared by Dr. Harvey from the hospital records, show the comparative frequency and severity of the accidents from gymnastics, riding, and football:

TABLE NO. 1.—*List of casualties among United States cadets due to football, riding, and gymnastics for a period of three months in 1892.*

Football injuries, September 1, 1892, to November 30, 1892.....	37
Injuries in riding hall, October 15, 1892, to January 15, 1893.....	26
Injuries in gymnasium	10
Number of men—	
Who played football	27
Under instruction in riding hall	198
Under instruction in gymnasium	101
Days lost from—	
Football accidents	106
Riding injuries	71
Accidents in gymnasium ¹	58

¹ Forty-six days of the fifty-eight lost by one accident (fracture).

TABLE NO. 2.—*Casualties among United States cadets due to football, riding, and gymnastics, for a period of three months in 1893.*

Football:	
Sprains—Slight	4
Severe	32
Contusions and lacerations.....	17
Fracture both bones of leg	1
Riding, injuries of all kinds	17
Gymnasium, injuries of all kinds.....	9
Number of football players (approximate).....	34
Number under instructions in riding hall	184
Number under instructions in gymnasium	106

Total injured.

Football.....	54
Riding.....	17
Gymnasium.....	9
Total	80

Injuries in riding and gymnasium usually very slight.

Days lost from—	
Football accidents	277
Injuries in riding ¹	57
Injuries in gymnasium.....	11

	1892.	1893.
Per cent of accidents per man in—		
Football.....	1.05	1.6
Riding .....	.11	.09
Gymnasium.....	.10	.08
Per cent of days lost per man in—		
Football.....	3.93	8.01
Riding .....	.35	.31
Gymnasium.....	.10	.15
Per cent of men off duty per diem in—		
Football	1.18	3.01
Riding .....	.79	.68
Gymnasium.....	.64	.12
Per cent of days lost per accident in—		
Football	2.98	5.01
Riding	2.74	3.04
Gymnasium.....	5.80	1.02

To obtain the comparative percentages of football and riding accidents multiply percentages of football accidents by 3, as football is only played once a week, and riding is done three times a week.

To obtain the comparative percentages of football and gymnasium accidents multiply the football percentage by 6, as the exercise in the gymnasium is taken six times a week.

The percentages and the remarks following them were added by the chairman of the committee. Dr. Harvey suggests the following as a fairer basis of comparison:

Memorandum.—It is proper to add that although match games of football have been played only Saturday afternoons at the Academy, there have been practice games Wednesday afternoons at which there have happened a few casualties, but not enough to materially invalidate the correction suggested in the last paragraph.

¹ Twenty-seven days of the fifty-seven lost by one case (kick).
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However, it might be said in all fairness to football that, as compared with riding accidents, the percentage of accidents per man in football, shown by the table, should be doubled and trebled when compared with accidents in riding and in the gymnasium.

So far as we know, this is the first contribution of accurate comparative data of these three forms of athletics in the same institution, under identical surroundings and by the same class of men. If the frequency of gymnastics (six times a week), of riding (three times a week), and of football (once a week) are taken into account it shows that per man playing there were respectively from about twenty to over one hundred times as many accidents in football as in the riding hall and in the gymnasium, and that the gravity of the accidents as measured by the number of days lost per man playing or per man injured, or by the number of men off duty per diem, is vastly greater from football than from either of the other two forms of athletics. If these conditions were to continue it would be a serious question whether football should be allowed, in spite of its manifest advantages. The price paid would seem to be too high for the advantages gained. If the rules of the game are so altered as to eliminate the unnecessary dangers, the committee would decidedly and emphatically favor this game as well as all other athletic sports. From the daily papers we learn that the rules have recently been amended so as to eliminate the "mass plays" which are the chief sources of danger, and if this be so, we hope that football will not only be allowed, but encouraged.

The question of interacademic games is quite different. The Superintendent has discussed this question in a separate report, to which we refer, and in his conclusion that such games would be better abandoned we concur.

W. W. KEEN, *Chairman.*
JOHN C. BLACK.
JOHN J. DAVIS.

MISCELLANEOUS AFFAIRS.

Committee on miscellaneous affairs.—Messrs. JOHN J. DAVIS, NEWTON M. CURTIS, and THOMAS F. EDMANDS.

The committee on miscellaneous affairs finds the following recommendations made in his last annual report by the Superintendent of the Military Academy.

DEPARTMENT OF LAW.

The department of law is the only one headed by a full professor that is not provided with an assistant professor having the pay of captain, mounted. It seems but just that this department should be placed upon the same footing in this respect as the others.

The committee recommends such an increase in rank and pay.

ADJUTANT OF THE ACADEMY.

The adjutant of the Academy is also secretary of the academic board, and upon occasions of ceremony acts as aid-de-camp to the Superintendent. His duties are at least as important as those of an assistant professor, and they are more onerous, while his personal expenses are greater. It seems but just that the officer holding this position should receive the pay of captain, mounted, as in the case of assistant professors. Legislation to that effect is recommended.

The committee recommends such an increase in rank and pay.

MASTER OF THE SWORD.

The sword master is also the instructor in gymnastics and swimming. He is a civilian, appointed by the Secretary of War. The present incumbent has worked up an admirable course of gymnastics for the corps of cadets. His system of calisthenics has been adopted by the War Department for the use of the Army. He is required to preserve discipline and to exercise control of cadets while under his instruction. It would greatly strengthen his hand if he should have military rank, and in view of the great and increasing importance of his department I recommend that legislation be solicited giving him the rank, pay, and emoluments of a first lieutenant of infantry.

The committee recommends that the rank and pay thus indicated be given the sword master while so acting.

BAND.

By the act of March 3, 1877, the Military Academy band was reduced to 1 teacher of music and 24 enlisted men, which is its present authorized strength. Of the enlisted men, 6 receive \$34 per month; 6, \$20, and the remaining 12, \$17, with the usual allowances of enlisted men. At the time of this reduction the band consisted of 1 teacher of music and 40 enlisted musicians, of whom 10 received \$34, and the remaining 30 received \$30 per month, with the usual allowances of enlisted men. Since that date every Superintendent of the Academy, with perhaps one exception,

and many or all Boards of Visitors have recommended an increase of the band. The Board of Visitors this year recommends that the band be increased to at least forty members and a leader. To anyone familiar with music it needs no argument to prove that the present numbers and pay are not sufficient. Is a good band really necessary to the practical efficiency of the Academy, is the only question which can be asked. The answer is plain when the purpose the band subserves is considered. Military pomp has a serious and practical object: the cultivation of the military spirit. It is in the same category with patriotic songs, discipline, and monuments to dead heroes. There is no more essential part of it than good music. I recommend that the band be restored to the numbers and pay which it had before the reduction in 1877.

The committee concurs in the above recommendations.

A communication from Mr. Arthur A. Clappé is appended, showing the details and extra-cost of the proposed increase of the band. The committee is inclined to think that \$34 per month, as stated by the Superintendent, instead of \$35 per month, as set forth by Mr. Clappé, will be sufficient for the ten first-class musicians. Otherwise there appears to be no difference in figures.

The band as now constituted is not a credit to the United States, and should be increased to at least forty members.

By a resolution of the Board of Visitors one of its members was requested to remain at West Point after the graduation exercises to observe the examination and entrance of the new class.

The candidates who were examined and passed in March last were entered as fast as the work could be performed after June 12, and were given second-hand uniforms for use until their own uniforms could be made. Active work upon their instruction was immediately commenced.

Formerly it was the custom to keep the new cadets in their civilian clothing until the uniforms for which they were measured could be completed. As all this work is done on the post at the tailor's shop established by the quartermaster, whose force is necessarily limited, the civilian clothing worn by the new cadets was generally ruined before their uniforms were completed. Nor is such clothing suitable for work like military drill, especially the vigorous and straining motions of the setting-up exercises with which the instruction commences.

The second-hand uniforms given the new cadets are the best of the garments left behind by graduating classes. Before being issued again every article is thoroughly cleansed and repaired. Many of them look as good as new, and easily last for the short time they are required. The new cadets are very glad to get them, and the change from the old method is very much to be commended, not only because the feelings of the newcomers are spared, but because the pride they can feel in their appearance as soldiers makes the work of their military instructor so much the easier, a considerable economy in the time being thus effected.

“Plebe drill,” as it is called, now gives little amusement to spectators, except in the ridiculous manners assumed by some of the young cadet drillmasters, who, fourth-class men themselves only a few days before, give themselves airs which cause observers to laugh at them rather than at their pupils.

Meanwhile, the candidates who reported immediately after the graduation day for the first time were being examined in various branches—arithmetic, writing and orthography, geography, English grammar, and United States history—copies of the papers used in each of which are hereby subjoined. The figures “Wt. 6.,” etc., given opposite the questions denote the weight that a correct answer carries. The paper on writing and orthography was the only one done from dictation.

On the night of June 9 a serious fire occurred near the gas house, by which a portion of the coal supply intended for the gas works was consumed, together with certain trestlework belonging to a narrow gauge railroad track. At this fire the cadet engine became unserviceable. The engine of the enlisted men did good service. The battalion of cadets performed a very creditable piece of work in preventing the spread of the fire.

The Superintendent of the Academy ordered a board of officers to investigate the cause of the fire, but the report had not been received when the committee left West Point. The committee has, however, by its own observation, formed the opinion that the fire-alarm system should be improved, and that it is false economy to withhold from the post the most complete and modern apparatus for this purpose.

Moreover, it would seem advisable to have a standpipe or some means of obtaining direct pressure upon hydrants, by which powerful streams may be directed without the use of steam fire engines, and the committee is of the opinion that more water mains and more hydrants should be supplied.

On the 13th of June, the day after the first class had graduated and the third class had gone on furlough, the new first and third classes went into camp. The admirable discipline and careful attention to every military detail make the encampment the model for all the troops in the country to follow in all things, except perhaps one, that is the internal arrangement and overburdening of the tents with too much luggage in the form of extra clothing, unnecessary bedding, trousers cases, etc.

The suggestion is made that a light rack to contain the trousers case might easily be constructed for the rear of each tent, on which rack the arms and equipments, hats, and a reasonable amount of extra clothing might be supported.

A hanging shelf under the ridgepole and a backboard hinge to the rear of the tent floor to stand up against the rear pole would be convenient and add to the orderly appearance of the tents, besides making the task of keeping them in order much easier to the cadets.

The bedding furnished each cadet includes no mattress. Consequently, the more "comfortables" a man can secure for his own use to interpose between him and a hard tent floor the more comfortable he can make himself. The result is an unsightly pile of bedding in the corner of each tent. A simpler plan would be to furnish each cadet with a mattress, 7 feet long by 2 feet 3 inches wide, to be kept in the tent only between tattoo and reveille, and piled during the day in a separate tent for each company, either in one of the streets, or, better still, at one side and slightly detached from the camp, where the mattresses could thus be thoroughly aired every day. This plan has been successfully adopted by volunteer militia for many years.

JOHN J. DAVIS, *Chairman.*

NEWTON M. CURTIS.

THOMAS F. EDMANDS.

EXAMINATIONS.

Each candidate received the following notice:

"GENERAL DIRECTIONS FOR APPOINTEES.

"First day.—Grammar, 9 a. m. to 11.30 a. m.; writing and orthography, 2 p. m. to p. m.

"Second day.—History, 9 a. m. to 12 m.; geography, 2 p. m. to 4.30 p. m.

"Third day.—Arithmetic, 9 a. m. to 12.30 p. m.; reading, 2.30 p. m.

"Appointees should come prepared to remain in the examination hall during the entire time allotted to each subject.

"Appointees will not bring to or take from the examination hall any paper, blank or otherwise, but they may bring pens.

"Appointees will not communicate with each other in any way whatever, or make use of any unauthorized information during any examination.

"Upon all their papers appointees will write distinctly their numbers, the date and place of examination."

On the other side of the paper containing the above information was printed information containing directions for the examination in arithmetic, which was substantially alike for all the examinations, as follows:

"DIRECTIONS FOR EXAMINATION IN ARITHMETIC.

"Write your number distinctly.

"Do not make a noise by moving your chair.

"Arithmetical solutions are required, but full credit will be given for any correct solution.

"Sufficient work to indicate clearly the method and operations is required in all examples.

"Indicate your answer in each example by writing *Ans.* near it.

"Answers to examples without solution will not receive credit.

"Work to include four decimal places, when necessary, is sufficiently accurate.

"Reduce all fractional results to simplest form.

"A rule is not received as a reason for a principle, or in place of a solution.

"Do not attempt to solve examples upon extra paper with a view to copying.

"Do not copy the questions or examples upon the sheet of your work, but be careful to put your work in each case in the space having the same number.

"Draw a line with your pen through erroneous work, and begin again. Do not erase with a knife or eraser.

"You are advised to take the examples in the order as given. Should anyone delay you too long, pass on to others. After trying all you can return to the unsolved ones in case there is time.

"You will receive credit for all correct work done; therefore, do what you can in each case, even though you may not be able to complete the solution or obtain a correct result.

"Numerical errors do not count as much against you as errors in methods.

"Keep your eyes and attention upon your own work. Communication of any kind is forbidden. Bring no blank paper or memorandum to the examination hall.

"Do not mark upon this paper. Bring it to the examination in arithmetic.

"When you have finished your work look it over carefully, and state the arithmetics you have studied.

"When all is completed to your satisfaction, take your hat, this paper, the list of examples, and the paper with your solutions and answers (three papers in all) to the officer in charge of the examination.

"Walk on your toes so as not to disturb others.

"After papers have been handed in they will not be returned.

"Assume the following data:

"1 pound avoirdupois = 7,000 grains troy.

"1 pound avoirdupois is the weight of 27.7015 inches of distilled water.

"1 cubic foot of water weighs 1,000 ounces avoirdupois.

"25 pounds avoirdupois = 1 quarter.

"1 fathom = 6 feet; 1 hand = 4 inches.

"40 square rods = 1 rood. R.

"1 United States gallon liquid or wine measure contains 231 cubic inches.

"1 English imperial gallon contains 277.274 cubic inches.

"1 gallon beer measure contains 282 cubic inches.

"1 bushel dry measure contains 2,150.422 cubic inches.

"The ratio of a to b is $\frac{a}{b}$ $\frac{a}{b}$:

"1 ounce troy = 31.1 grams."

EXAMINATION IN ARITHMETIC, JUNE, 1894.

[Time, three and a half hours.]

1. Wt. 8. The sum of two numbers is 365 and their difference is 0.0675; what are the numbers?

2. Wt. 8. What part of 3.003 is $\frac{1}{2}$ of 0.057?

3. Wt. 7. If 3 kilometers are as much under 2 miles as 5 kilometers are over 3 miles, how many yards are there in a kilometer?

4. Wt. 11. B is a town on a river, between and equidistant from A and C. The direction of the current is from C toward A. A boat goes from B to A and back to B in 5 hours 15 minutes, and it goes from A to C, against the current, in 7 hours; how long will it take the boat to go from C to A?

5. Wt. 11. Simplify $\frac{5\frac{1}{2} - \frac{1}{2}}{1\frac{1}{2} \text{ of } \frac{1}{2} - 10\frac{1}{2}} \times \frac{1}{2} \text{ of } \frac{1\frac{1}{2} \text{ of } 4\frac{1}{2}}{13\frac{1}{2} \text{ of } 5\frac{1}{2}}$. Give result in form of a decimal.

6. Wt. 11. Two farmers own adjoining farms of 300 and 500 acres, respectively. They unite the farms and take in a third partner who pays them \$800, each to own a third share of the combined farms. How is the \$800 to be divided between the original two farmers?

7. Wt. 15. The wages of A and B together for $22\frac{1}{2}$ days amount to the same sum as the wages of A alone for $38\frac{1}{2}$ days. For how many days will the sum pay the wages of B alone?

8. Wt. 14. 54 men dig a ditch at the rate of 81 feet per day; after 13 days' work 8 men are replaced by 8 boys, and 11 days after that the length of the ditch finished is 1,889 feet. How many feet does 1 boy dig in 1 day?

9. Wt. 15. A cistern is continuously and uniformly supplied by a stream running into it. It has 10 discharge pipes, each of which discharges 1 gallon per hour. The 10 pipes together will empty it in $2\frac{1}{2}$ hours, and 6 pipes will empty it in $5\frac{1}{2}$ hours. In what time will 3 pipes empty it?

The cistern is supposed to be full at the beginning in each case, and the supply stream continues to run in.

PLACE, _____,
June _____, 1894. No. _____.

EXAMINATION IN ENGLISH GRAMMAR.

[Time allotted, two and one-half hours.]

Directions.—On the dotted line opposite the word “place” the candidate will write the name of the place where his examination occurs; opposite the word “June” he will write the day of the examination; opposite the word “No.” he will write, in figures, his number.

DIVISION 1.—*Weight, 15.*

N. B.—Write the answers below, numbering them to correspond to the questions. An additional sheet of paper may be used if necessary; it must be numbered and dated as at the top of this page.

Wt. 3. (1) Give the principal parts (present tense, past tense, and past participle) of the following verbs: 1, choose; 2, crow; 3, eat; 4, freeze; 5, knit; 6, let; 7, mow; 8, slay; 9, lie (to recline); 10, throw; 11, stick; 12, fly; 13, arise; 14, sit; 15, burst.

Wt. 3. (2) Write the plurals of the following nouns: 1, motto; 2, lasso; 3, fairy; 4, monkey; 5, wolf; 6, belief; 7, axis; 8, synopsis; 9, man-of-war; 10, pailful; 11, Norman; 12, f; 13, phenomenon; 14, tooth brush; 15, focus.

Wt. 3. (3) Write the feminine form of the following nouns: 1, giant; 2, ambassador; 3, sorcerer; 4, hero; 5, testator; 6, Englishman; 7, peacock; 8, conductor; 9, he-bear; 10, duke; 11, dog; 12, traitor; 13, sultan; 14, king; 15, mankind.

Wt. 3. (4) Write the possessive case of the following words: 1, we; 2, women; 3, Charles; 4, they; 5, prince; 6, man-of-war; 7, it; 8, Frederick the Great; 9, Duke of Wellington; 10, sons.

Wt. 3. (5) 1, define a sentence; 2, define a clause; 3, define a phrase; 4, what is the infinitive mood? 5, what is a participle?

DIVISION 2.—*Weight, 45; weight of each word, 2.25.*

N. B.—Write across both pages if necessary. In parsing give no rules, declensions, comparisons, nor principal parts of verbs, but in other respects parse fully, being careful to give the *subject of each verb*, the *governing word of each objective case*, the *antecedent of each pronoun*, and to state precisely what *each conjunction connects* and *between what words each preposition shows the relation*. Important omissions will be taken to indicate ignorance. Intelligible abbreviations are allowed.

Parse the words in italics in the following sentence: *On this question of principle while actual suffering was yet afar off, our fathers raised their flags against a power to which, for purposes of foreign conquest and subjugation, Rome, in the height of her glory, is not to be compared—a power which has dotted over the surface of the whole globe with her possessions and military posts.*

- | | |
|--------------|--------------------|
| 1. on | 11. for |
| 2. while | 12. and |
| 3. suffering | 13. Rome |
| 4. yet | 14. in |
| 5. afar | 15. to be compared |
| 6. off | 16. power |
| 7. raised | 17. which |
| 8. against | 18. over |
| 9. to | 19. surface |
| 10. which | 20. with |

DIVISION 3.—*Weight, 40; weight of each sentence, 2.*

N. B.—In correcting these errors the candidate will draw his pen through the error and write the correct word or words above.

Correct all errors in the following sentences, remembering that evasion is not correction.

1. Choose between these four houses.

2. He jumped in a cab.
3. They were very respected.
4. He is very sensitive of cold.
5. That custom has been formerly quite popular.
6. Ask that man, he who stands by the window.
7. Are either of these places marked on the map?
8. You can hardly find a more universal blunder.
9. I gave it to a man whom I thought was the owner.
10. I found it harder than I thought it would have been.
11. I have written to him so that he might be ready for us.
12. There is both a large and small dictionary in the room.
13. He hadn't ought to have told her about it.
14. Scarcely one in twenty could write their own names.
15. He was illy equipped for the journey.
16. Nothing else but weeds will grow on it.
17. She was disgusted with him for acting so silly.
18. Which is the heaviest, her's or mine?
19. I have and ever shall insist on the necessity of economy.
20. Each have their own faults.

N. B.—The candidate will write below the names of the text-books on grammar that he has been using during the past year.

PLACE, _____,
_____, 189—. No. ____.

EXAMINATION IN WRITING AND ORTHOGRAPHY.

DIRECTIONS TO APPOINTEES.

Commence on this page and write until it is filled, then write on the second and third, consecutively. Write on both sides of the paper. Leave an interval of two lines between the prose and the poetry. Write the selected words opposite their corresponding numbers on the 4th page. Misplaced and omitted words will be counted as errors. Every illegible word will be counted as an error in spelling. (This includes words in which *e* and *i* are written alike with the dot placed between them, and all similar devices.) After the entire paper is written ample time will be given to revise and correct it. Corrections must be made by drawing a line through words wrongly spelled and rewriting them. No erasures with knife or eraser are allowed.

While the Declaration was the subject of general conversation in England, military operations recommenced on the continent. The preparations of France had been such as amazed even those who estimated most highly her resources and the abilities of her rulers.

Both her agriculture and her commerce were suffering. The vineyards, the interminable cornfields, had failed to yield their increase; the looms were silent; and merchant ships were rotting in the harbors. Yet the monarchy presented to its numerous enemies a front more haughty and more menacing than ever.

Louis had determined not to make any advance toward a reconciliation with the new government of England till the whole strength of his realm had been put forth in one more effort.

A mighty effort in truth it was, but too exhausting to be repeated. He made an immense display of force at once on the Pyrenees and on the Alps, on the Rhine and on the Meuse, in the Atlantic and in the Mediterranean.

That nothing might be wanting which could excite the martial ardor of a nation eminently high-spirited, he instituted, a few days before he left his palace for the

camp, a new military order of knighthood, and placed it under the protection of his own sainted ancestor and patron.

In fields of air he writes his name,
And treads the chambers of the sky,
He reads the stars and grasps the flames,
That quivers round the throne on high.
In war renowned, in peace sublime,
He moves in greatness and in grace,
His power, subduing space and time,
Links realm to realm, and race to race.

- | | | | |
|----------------|-----------------|------------------|----------------|
| 1. Apology. | 7. Buoyant. | 13. Dungeon. | 19. Palace. |
| 2. Accelerate. | 8. Collision. | 14. Excel. | 20. Puncture. |
| 3. Adjacent. | 9. Compel. | 15. Exonerate. | 21. Quotient. |
| 4. Balance. | 10. Dalliance. | 16. Gnawing. | 22. Scourge. |
| 5. Balloon. | 11. Damaged. | 17. Intrepidity. | 23. Supersede. |
| 6. Bequeath. | 12. Descendant. | 18. Limited. | 24. Surgeon. |

A true copy :

_____,
First Lieutenant Fifth Cavalry, Adjutant U. S. Military Academy.

PLACE, _____,
June —, 1894. No. —.

EXAMINATION IN UNITED STATES HISTORY.

[Time allotted, three hours.]

N. B.—Write your answers as legibly and concisely as possible, without omitting material facts.

If there is not space enough for your answer, write on a separate sheet and number question on sheet, and make a note of it on this paper.

6. (1) What explorations or discoveries were made by the following named individuals:
 - (1) Magellan.
 - (2) Cordova.
 - (3) De Monts.
3. (2) What parts of North America were colonized by the French?
4. (3) What were the London and Plymouth companies, and what territory was granted to each, 1606?
4. (4) Give the history of Maine during the colonial period.
4. (5) When, where, and under what circumstances were the Carolinas separated?
3. (6) What were the terms of the treaty of Utrecht, which ended Queen Anne's war?
3. (7) What were the terms of the treaty of Aix la Chapelle, which closed King George's war?
6. (8) Give an account of the expedition against Canada in 1775.
4. (9) Give an account of the siege of Boston.
4. (10) Give an account of the battle of Long Island.
8. (11) What part was taken in the American war by the following named individuals?
 - (1) Lafayette.
 - (2) Benedict Arnold.
 - (3) Horatio Gates.
 - (4) Count de Grasse.

- 6. (12) By what party was Thomas Jefferson first elected President, and what were the political principles of this party?
- 6. (13) Give an account of the Mormons.
- 3. (14) Give an account of Dade's massacre.
- 6. (15) State the principal steps of the political struggle that led to the war of the Rebellion.
- 6. (16) Give the names and results of six important battles of 1864.

Battles.

Victors.

- 6. (17) In what war were the following battles fought? What were the opposing forces, and which side won?

War.	Forces.	Victors.
Dade's massacre		
Chancellorsville		
Brandywine		
Plains of Abraham		
Reseca de la Palma		
Lundy's Lane		

- 8. (18) What part was taken in American history by each of the following named individuals?
 - (1) Stephen Decatur.
 - (2) Edwin M. Stanton.
 - (3) S. F. B. Morse.
 - (4) John Wilkes Booth.
- 4. (19) Give an account of the Modoc war.
- 6. (20) What is meant by civil service reform, and when was the civil service bill passed?
- (21) What histories of the United States have you read or studied?

PLACE, _____,
June _____, 1894. No. _____

EXAMINATION IN GEOGRAPHY.

[Time allotted, two and one-half hours.]

- 1. Name the continents of the Eastern Hemisphere. Is there land connection between them?
- 2. What oceans wash the shores of North America?
- 3. Name and locate the three most important mountain ranges of South America.
- 4. Name the large rivers of North America, whose mouths are on the north and west coast of the continent.
- 5. Where do the following rivers rise and empty; give the general direction of their flow: Obi, Niger, Bramapootra, Zambesi, Ganges, Danube.
- 6. What Mexican States are contiguous to Texas?
- 7. Name four of the principal upland cities of Mexico.
- 8. In going along the coast from Rio Janeiro to Callao what countries are touched?
- 9. Name, in order, the states along the northern coast of Africa, between Gibraltar and Suez.
- 10. Bound the Australian colony of New South Wales, and name its principal river.

11. Give the boundaries of Asiatic Russia, and state what countries it includes.
12. Locate, definitely, the following cities of Germany, and state upon what waters situated, if any: Hanover, Cologne, Leipsic, Stettin.
13. Give the political and natural boundaries of Spain; name four of the largest rivers that drain the country.
14. In going from London, England, to Belfast, Ireland, by boat, name the waters passed over.
15. To what countries do the following islands belong: Cuba, San Domingo, Bahamas, Jamaica, Bermudas; which is farthest north, farthest south?
16. In the Atlantic States north and east of New York, name the two important mountain ranges or ridges; name the river which drains the valley between them and state where it empties; what are the two most important cities on this river?
17. For what industry is Pennsylvania most noted; what are the chief products of this industry? Name five of the principal cities of Pennsylvania, and state where each is located.
18. In going from Wheeling to New Orleans by boat, what waters are traversed and what States are successively passed on the left hand? Locate definitely the capitals of each of these States.
19. Name all the States which have two waterways to the ocean (one through the Lakes and the other through the Mississippi River). Name and locate definitely their capitals.
20. What States lie, wholly or in part, west of the Rocky Mountains, and also wholly or in part north of the central Pacific Railroad?
21. What States lie, wholly or in part, between the Mississippi and Missouri rivers? Name and locate definitely their capitals.
22. What States and Territories are in part drained by the Colorado of the West. Name and locate definitely their capitals.
23. The meridian of San Francisco passes through what States? Its parallel passes through what States and Territories?
24. Bound the States of Georgia, Nevada, Michigan.

INFORMATION RELATIVE TO THE APPOINTMENT AND ADMISSION OF CADETS TO THE UNITED STATES MILITARY ACADEMY.

APPOINTMENTS.

How made.—Each Congressional district and Territory—also the District of Columbia—is entitled to have one cadet at the Academy. Ten are also appointed *at large*. The appointments (except those *at large*) are made by the Secretary of War at the request of the Representative or Delegate in Congress from the district or Territory; and the person appointed must be an actual resident of the district or Territory from which the appointment is made. The appointments *at large* are specially conferred by the President of the United States.

Manner of making application.—Applications can be made at any time, by letter to the Secretary of War, to have the name of the applicant placed upon the register that it may be furnished to the proper Representative or Delegate when a vacancy occurs. The application must exhibit the full name, date of birth, and permanent abode of the applicant, with the number of the Congressional district in which his residence is situated.

Date of appointments.—Appointments are required by law to be made one year in advance of the date of admission, except in cases where, by reason of death or other cause, a vacancy occurs which can not be provided for by such appointment in advance. These vacancies are filled in time for the next annual examination.

Alternates.—The Representative or Delegate in Congress may nominate a legally qualified second candidate, to be designated the *alternate*. The alternate will receive from the War Department a letter of appointment, and will be examined *with the regular appointee*, and if duly qualified will be admitted to the academy in the event of the failure of the principal to pass the prescribed preliminary examinations. The alternate will not be allowed to defer his reporting at West Point until the result of the examination of the regular appointee is known, but must report at the time designated in his letter of appointment. The alternate, like the nominee, should be designated as nearly one year in advance of date of admission as possible.

ADMISSION OF CADETS.

Candidates, upon receiving their conditional appointments, will be instructed to appear for mental and physical examination before a board of Army officers to be convened at the military post nearest their respective places of residence on the 1st day of March annually (except when that day comes on Sunday, in which case the examinations will commence on the following Tuesday). The candidates who pass successfully will be admitted to the Academy, without further examination, upon reporting in person to the Superintendent at West Point before 12 o'clock m. on the 15th day of June.

Candidates selected to fill the vacancies unprovided for at the examinations held in March, and those which may occur after that time, will be instructed to report at

NOTE.—There being no provision whatever for the payment of the traveling expenses of either accepted or rejected candidates for admission, no candidate should fail to provide himself in advance with the means of returning to his home in case of his rejection before either of the examining boards, as he may otherwise be put to considerable trouble, inconvenience, and even suffering on account of his destitute condition. If admitted the money brought by him to meet such a contingency can be deposited with the treasurer on account of his equipment as a cadet, or returned to his friends.

West Point for examination early in June. The candidates who pass successfully this examination will be admitted at once to the Academy without returning to their homes.

Immediately after reporting to the Superintendent for admission, and before receiving his warrant of appointment, the candidate is required to sign an engagement for service in the following form, in the presence of the Superintendent, or of some officer deputed by him:

"I, ———, of the State (or Territory) of ———, aged ——— years ——— months, do hereby engage (with the consent of my parent or guardian) that, from the date of my admission as a cadet of the United States Military Academy, I will serve in the Army of the United States for eight years, unless sooner discharged by competent authority. ———"

"In the presence of

———."

The candidate is then required to take and subscribe an oath or affirmation in the following form:

"I, ———, do solemnly swear that I will support the Constitution of the United States and bear true allegiance to the National Government; that I will maintain and defend the sovereignty of the United States paramount to any and all allegiance, sovereignty, or fealty I may owe to any State or country whatsoever; and that I will at all times obey the legal orders of my superior officers and the rules and articles governing the armies of the United States. ———"

"Sworn and subscribed, at ———, this ——— day of ———, eighteen hundred and ———, before me. ———"

Qualifications.—The age for the admission of cadets to the Academy is between seventeen and twenty-two years. Candidates must be unmarried, at least five feet in height, free from any infectious or immoral disorder, and, generally from any deformity, disease, or infirmity which may render them unfit for military service. They must be well versed in reading, in writing (including orthography), in arithmetic, and have a knowledge of the elements of English grammar, of descriptive geography (particularly of our own country), and of the history of the United States.

CHARACTER OF EXAMINATIONS.*

Physical examination.

Every candidate is subjected to a rigid physical examination, and if there is found to exist in him any of the following causes of disqualification to such a degree as would immediately, or at no very distant period, impair his efficiency, he is rejected:

- (1) Feeble constitution; unsound health from whatever cause; indications of former disease; glandular swellings, or other symptoms of scrofula.
- (2) Chronic cutaneous affections, especially of the scalp.
- (3) Severe injuries of the bones of the head; convulsions.
- (4) Impaired vision, from whatever cause; inflammatory affections of the eyelids; immobility or irregularity of the iris; fistula lachrymalis, etc.
- (5) Deafness; copious discharge from the ears.
- (6) Loss of many teeth, or the teeth generally unsound.
- (7) Impediment of speech.
- (8) Want of due capacity of the chest, and any other indication of a liability to a pulmonic disease.

* It is suggested to all candidates for admission to the Military Academy that, before leaving their place of residence for West Point, they should cause themselves to be thoroughly examined by a competent physician and by a teacher or instructor in good standing. By such an examination any serious physical disqualification or deficiency in mental preparation would be revealed, and the candidate probably spared the expense and trouble of a useless journey and the mortification of rejection.

It should be understood that the informal examination herein recommended is solely for the convenience and benefit of the candidate himself, and can in no manner affect the decision of the academic and medical examining boards at West Point.

(9) Impaired or inadequate efficiency of one or both of the superior extremities on account of fractures, especially of the clavicle, contraction of a joint, deformity, etc

(10) An unusual exenrvature or incurvature of the spine.

(11) Hernia.

(12) A varicose state of the veins of the scrotum or spermatic cord (when large), hydrocele, hemorrhoids, fistulas.

(13) Impaired or inadequate efficiency of one or both of the inferior extremities on account of varicose veins, fractures, malformation (flat feet, etc.), lameness, contraction, unequal length, bunions, overlying of supernumerary toes, etc.

(14) Ulcers, or unsound cicatrices of ulcers likely to break out afresh.

Academical examination.

Reading.—In reading candidates must be able to read understandingly, with proper accent and emphasis.

Writing and orthography.—In writing and orthography they must be able, from dictation, to write sentences from standard pieces of English literature, both prose and poetry, sufficient in number to test their qualifications both in handwriting and orthography. They must also be able to write and spell correctly from dictation a certain number of standard test words.

Arithmetic.—In arithmetic they must be able—

1st. To explain, accurately and clearly, its objects and the manner of writing and reading numbers—entire, fractional, compound, or denominate;

2d. To perform with facility and accuracy the various operations of addition, subtraction, multiplication, and division of whole numbers, abstract and compound or denominate, giving the rule for each operation, *with its reasons*, and also for the different methods of proving the accuracy of the work;

3d. To explain the meaning of reduction—its different kinds, its application to denominate numbers in reducing them from a higher to a lower denomination and the reverse, and to equivalent decimals; to give the rule for each case, *with its reasons*, and to apply readily these rules to practical examples of each kind;

4th. To explain the nature of prime numbers and factors of a number—of a common divisor of two or more numbers, particularly of their *greatest common divisor*—with its use, and to give the rule, *with its reasons*, for obtaining it; also the meaning of a common multiple of several numbers, particularly of their *least common multiple*, and its use, and to give the rule, *with its reasons*, for obtaining it, and to apply each of these rules to examples;

5th. To explain the nature of fractions, common or vulgar, and decimal; to define the various kinds of fractions, with the distinguishing properties of each; to give all the rules for their reduction, particularly from mixed to improper and the reverse, from compound or complex to simple, to their lowest terms, to a common denominator, from common to decimal and the reverse, for their addition, subtraction, multiplication, and division, *with the reason* for each change of rule, and to apply each rule to examples;

6th. To define the terms ratio and proportion; to give the properties of proportion and the rules, and *their reasons*, for stating and solving questions in both simple and compound proportion, or single and double rule of three, and to apply these rules to examples.

7th. *The candidates must not only know the principles and rules referred to above, but they are required to possess such a thorough understanding of all the fundamental operations of arithmetic as will enable them to combine the various principles in the solution of any complex problem which can be solved by the methods of arithmetic. In other words, they must possess such a complete knowledge of arithmetic as will enable them to take up at once the higher branches of mathematics without further study of arithmetic.*

8th. It is to be understood that the examination in these branches may be either written or oral, or partly written and partly oral, that the definitions and rules

must be given fully and accurately, and that the work of all examples, whether upon the blackboard, slate, or paper, must be written plainly and in full, and in such a manner as to show clearly the mode of solution.

The following examples and questions in arithmetic are a few of those which have been used at past examinations. They are given in order to indicate more clearly what is required, but it should be distinctly understood that entirely different ones are used each year:

Multiply 4.32 by .00012.

Explain the reason for placing the decimal point in the answer. [*The rule for so doing is not the reason.*]

Reduce $5\frac{1}{2} + \frac{7\frac{1}{2}}{0.5} - 0.725$
 $4 + \frac{3.45}{2\frac{1}{2}}$ to an equivalent decimal.

Divide 3380321 by MDCCXCIX, and express the quotient by the Roman system of notation.

Change .013 to an equivalent fraction whose denominator is 135.

Find the greatest common divisor of $26\frac{1}{2}$, $28\frac{1}{2}$, and $29\frac{1}{2}$.

How many men would be required to cultivate a field of $2\frac{1}{2}$ acres in $5\frac{1}{2}$ days of 10 hours each if each man completed 77 square yards in 9 hours?

Separate $772\frac{1}{2}$ into three numbers which shall be in the same proportion as $2\frac{1}{2}$, $\frac{1}{6}$, $\frac{1}{6}$.

5 cubic feet of gold weigh 98.20 times as much as a cubic foot of water, and 2 cubic feet of copper weigh 18 times as much as a cubic foot of water. How many cubic inches of copper will weigh as much as $\frac{1}{2}$ of a cubic inch of gold?

Find the least common multiple for the numbers $\frac{1}{2}$, 2.1, 5.25, $\frac{1}{4}$.

A wins 9 games out of 15 when playing against B, and 16 out of 25 when playing against C. How many games out of 118 should C win when playing against B?

A and B run a race, their rates of running being as 17 to 18. A runs $2\frac{1}{2}$ miles in 16 minutes 48 seconds, and B runs the entire distance in 34 minutes. What was the entire distance?

A and B can do a piece of work in 4 hours, A and C in $3\frac{1}{2}$ hours, B and C in $5\frac{1}{2}$ hours. In what time can A do it alone?

English shillings are coined from a metal which contains 37 parts of silver to 3 parts of alloy; one pound of this metal is coined into 66 shillings. The United States silver dollar weighs 412.5 grains, and consists of 9 parts silver to 1 part of alloy. What fraction of the United States dollar will contain the same amount of silver as one English shilling?

Give the rule for reducing a decimal of a given denomination to integers of lower denominations.

What is the effect of dividing the denominator of a fraction by a whole number, and why?

Explain the difference between a common fraction and a decimal.

What is the effect of annexing a cipher to a decimal, and why?

If the same number be subtracted from both terms of an improper fraction, what will be the effect? Why?

Give the rule for reducing a common fraction to an equivalent decimal, and explain why the resulting decimal will be equal to the common fraction from which it is obtained.

Give the rule for dividing one decimal by another, and explain why the decimal point in the quotient is placed where the rule directs.

Define reduction, and state the different kinds.

Grammar.—In *English grammar* candidates must be able—

1. To define the parts of speech and give their classes and properties; to give inflections, including declension, conjugation, and comparison; to give the corresponding masculine and feminine gender nouns; to give and apply the ordinary rules of syntax.

2. To parse fully and correctly any ordinary sentence, omitting rules, declensions, comparisons, and principal parts, but giving the subject of each verb, the governing word of each objective case, the word for which each pronoun stands or to which it refers, the words between which each proposition shows the relation, precisely what each conjunction connects, what each adjective and adverb qualifies or limits, the construction of each infinitive, and, generally, showing a good knowledge of the function of each word in the sentence. Omissions will be taken to indicate ignorance.

3. To correct in sentences or extracts any ordinary grammatical errors, such as are mentioned and explained in ordinary grammars.

It is not required that any particular grammarian or text-book shall be followed; but rules, definitions, parsing, and corrections must be in accordance with good usage and common sense. The examination may be written or oral, or both written or oral.

Geography.—Candidates will be required to pass a satisfactory examination, written or oral, or both, in *geography*, particularly of our own country. To give a candidate a clear idea of what is required the following synopsis is added to show the character and extent of the examination. Questions are likely to be asked involving knowledge of—

1st. Definitions of the geographical circles, of latitude and longitude, of zones and of all the natural divisions of the earth's surface, as islands, seas, capes, etc.

2d. The continental areas and grand divisions of water of the earth's surface.

3d. The grand divisions of the land; the large bodies of water which in part or wholly surround them; their principal mountains, location, direction, and extent; the capes, from what parts they project and into what waters; their principal peninsulas, location, and by what waters are they embraced; the parts connected by an isthmus, if any; their principal islands, location, and surrounding waters; the seas, gulfs, and bays, the coasts they indent, and the waters to which they are subordinate; the straits, the lands they separate, and the waters they connect; their principal rivers, their sources, directions of flow, and the waters into which they empty; their principal lakes, location and extent.

4th. The political divisions of the grand divisions. Their names, locations, boundaries, and capitals. General questions of the same character as indicated in the second section made applicable to each of the countries of each of the grand divisions.

5th. The United States. The candidate should be thoroughly informed as to its general features, configuration, location, and boundaries, both with respect to neighboring countries and latitude and longitude; its adjacent oceans, seas, bays, gulfs, sounds, straits, and islands; its mountain ranges, their location and extent; the sources, directions, and terminations of the important rivers and their principal tributaries; the lakes, and, in short, every geographical feature of the country, as indicated above. The location and termination of important railroad lines and other means of communication from one part of the country to another should not be omitted. The States and Territories are to be accurately located with respect to each other by their boundaries, and as to their order along the Atlantic Coast, the Gulf of Mexico, the Pacific Coast, the Northern frontier, the Mexican frontier, and the Mississippi, Missouri, and Ohio rivers. The boundary and other large rivers of each State, as well as all other prominent geographical features should be known. The names and locations of their capitals, and other important cities and towns are likewise to be known. In short, the knowledge should be so complete that a clear mental picture of the whole or any part of the United States is impressed on the mind of the candidate. More weight is attached to a knowledge of the geography of the United States than to that of all other countries combined.

History.—The candidate should make himself familiar with so much of the *History of the United States* as is contained in the ordinary school histories. The examination

may be written or oral, or partly written and partly oral, and will usually consist of a series of questions similar to the following:

I. Name the earliest European settlements within the present limits of the United States—when, where, and by whom made. When did the settlements made by other nations than the English come under the dominion of Great Britain, and of the United States?

II. What was the difference between the Royal, the Chartered, and the Proprietary colonies? How many colonies were there originally in Massachusetts and Connecticut? When were they united? How many in Pennsylvania? When were they separated?

III. In what wars were the colonies engaged before the Revolution? What were the principal events and results of those of King William, Queen Anne, King George, and the French and Indian?

IV. What were the remote and the immediate causes of the American Revolution? Explain the navigation act, the stamp act, writs of assistance. When did the war of the Revolution properly begin? When, where, and how did it end? Give the particulars of Arnold's treason. Who were the most prominent generals in this war? Name the most important battles and their results.

V. The Constitution of the United States—why and when was it formed? When was it adopted?

VI. Give the names of the Presidents of the United States in their order. Give the leading events of the administration of each one; for example, that of—

Washington: Indian war; trouble with France; Jay's treaty; the whisky rebellion, etc.

Jefferson: War with Tripoli; purchase of Louisiana; the embargo, etc.

Madison: War of 1812; its causes; the principal battles on land and sea; peculiarity of its last battle, when ended, etc.

Monroe: Indian war; cession of Florida; Missouri compromise, etc.

Jackson: Black Hawk and Seminole wars; the United States Bank; nullification, etc.

Polk: The Mexican war; its causes; principal battles; result of it, etc.

Pierce: Repeal of Missouri compromise; troubles in Kansas, etc.

Buchanan: Civil war; how begun, etc.

Lincoln: War of secession; its causes; its results, social and political; explain doctrine of State sovereignty; alienation between Northern and Southern States; doctrine of secession; give an account of principal battles.

Johnson: Fourteenth amendment; tenure of office bill; Johnson's impeachment.

Grant: Fifteenth amendment; Alabama claims and treaty of Washington; Electoral Commission.

ACADEMIC DUTIES.

The academic duties and exercises commence on the first of September and continue until the first of June. Examinations of the several classes are held in January and June, and at the former such of the new cadets as are found proficient in studies and have been correct in conduct are given the particular standing in their class to which their merits entitle them. After each examination, cadets found deficient in conduct or studies are discharged from the Academy, unless the Academic Board, for special reasons in each case, should otherwise recommend. Similar examinations are held every January and June during the four years comprising the course of studies.

The examinations are very thorough, and require from the cadet a close and persevering attention to study, without evasion or slighting of any part of the course, as no relaxation of any kind can be made by the examiners.

Military instruction.—From the termination of the examination in June to the end of August the cadets live in camp, engaged only in military duties and exercises, and receiving practical military instruction.

Except in extreme cases, cadets are allowed but one leave of absence during the four years' course. As a rule the leave is granted at the end of the first two years' course of study.

PAY OF CADETS.

The pay of a cadet is \$540 per year, to commence with his admission to the Academy, and is sufficient, with proper economy, for his support. No cadet is permitted to receive money, or any other supplies, from his parents, or from any person whomsoever, without the sanction of the superintendent.

Each cadet must keep himself supplied with the following mentioned articles, viz:

Two pairs of uniform shoes, *one pair of overshoes (Arctic), *six towels, face; *two towels, bathing; one mattress, one pillow, *two pillow-cases, 36"x45"; *four sheets, $\frac{1}{2}$ x $\frac{3}{4}$; *two blankets, white; *one comfortable or quilted bed cover, one wash-bowl, *one tumbler, *one bottle of indelible ink, *one clothes brush or whisk broom, *one hairbrush, *one toothbrush, *one nailbrush, *one shaving brush and mug, *one shoe brush, *one razor, *one razor strop, *two pairs of white suspenders, *six white shirts, *two nightshirts, *six summer undershirts, *six winter undershirts, *six pairs of summer drawers, *six pairs of winter drawers, *six pairs of summer socks, *six pairs of winter socks, *six pocket handkerchiefs, *six pairs of cuffs, twelve white linen collars, six pairs of white Berlin gloves, two sets of white belts, one chair, *one penknife, one account book, *one trunk.

Candidates are authorized to bring with them the articles marked *. They are, however, informed that such articles can be purchased at regulated prices from the cadet quartermaster's department at West Point after their arrival.

Cadets are required to wear the prescribed uniform. All articles of their uniform are of a designated pattern and are sold to cadets at West Point at regulated prices.

EXPENSES OF CANDIDATES PRIOR TO ADMISSION.

The expenses of a candidate for board, washing, lights, &c., after he has reported and prior to admission, will be about \$10. Immediately after being admitted to the institution he must be provided with an outfit of uniform, the cost of which will be about \$90, making a total sum of \$100, which must be deposited with the treasurer of the Academy before the candidate is admitted. It is best for a candidate to take with him no more money than will defray his traveling expenses, and for the parent or guardian to send to "*The treasurer of the U. S. Military Academy*" the required deposit of \$100. Any deviation from the rule as to the amount or manner of making the deposit must be explained in writing by the parent or guardian of the candidate to the Superintendent of the Academy.

ASSIGNMENT TO CORPS AFTER GRADUATION.

The attention of applicants and candidates is called to the following provisions of an act of Congress approved May 17, 1886, to regulate the promotion of graduates of the United States Military Academy:

"That when any cadet of the United States Military Academy has gone through all its classes and received a regular diploma from the academic staff, he may be promoted and commissioned as a second lieutenant in any arm or corps of the Army in which there may be a vacancy, and the duties of which he may have been judged competent to perform; and in case there shall not at the time be a vacancy in such arm or corps, he may, at the discretion of the President, be promoted and commissioned in it as an additional second lieutenant, with the usual pay and allowances of a second lieutenant, until a vacancy shall happen."

GENERAL QUALIFICATIONS.

A sound body and constitution, suitable preparation, good natural capacity, an aptitude for study, industrious habits, perseverance, an obedient and orderly disposition, and a correct moral deportment are such essential qualifications that can-

didates knowingly deficient in any of these respects should not, as many do, subject themselves and their friends to the chances of future mortification and disappointment by accepting appointments at the Academy and entering upon a career which they can not successfully pursue.

Course of study and books used at the Military Academy.

FIRST YEAR.—Fourth Class.

Department.	Course of study, text-books, and books of reference.
Mathematics	Davies' Elements of Algebra. Davies' Legendre's Geometry. Ludlow's Elements of Trigonometry. Davies' Surveying. Church's Analytical Geometry. *Ludlow's Logarithmic Tables. Williams' Composition and Rhetoric. Abbott's How to Write Clearly. Melklejohn's English Language. *Smith's Synonyms Discriminated. *Roget's Thesaurus of English Words. *Webster's Dictionary.
Modern languages...	De Peiffer's French Pronunciation. Keetel's Analytical and Practical French Grammar. Casterède's Treatise on the Conjugation of French Verbs. Roemer's Cours de Lecture et de Traduction, Vol. I. Böcher's College Series of French Plays, Vol. II. *Spiers' and Surenne's French Pronouncing Dictionary.
History, geography, and ethics.	Lectures in Ethics and in Universal History.
Drill regulations, U. S. Army.	Practical Instruction in the Schools of the Soldier, Company and Battalion—Infantry. Practical Instruction in the School of the Cannoneer—Siege and Light Artillery.
Use of the sword, etc..	*Blunt's Firing Regulations for Small Arms. Instruction in Fencing and Bayonet Exercise and Military Gymnastics.

SECOND YEAR.—Third class.

Mathematics.....	Church's Analytical Geometry. Church's Descriptive Geometry, with its application to Spherical Projections, Shades, Shadows, and Perspective. Bass' Introduction to the Differential Calculus. Church's Calculus. Johnson's Treatise on the Method of Least Squares.
Modern languages...	Borel's Grammaire Française. Hennequin's Lessons in Idiomatic French. Revue Militaire de l'Étranger. The Weekly Figaro. Edgren's Compendious French Grammar. *De Peiffer's French Pronunciation. *Spiers and Surenne's French Pronouncing Dictionary.
Drawing.....	Constructive Problems in Plane Geometry, Point Paths, Topography, and plotting of surveys, with lead pencil, pen and ink, and colors; construction of the various problems in Descriptive Geometry, Shades and Shadows, and Linear perspective, and Isometric projections; practical surveying in the field. *Reed's Topographical Drawing and Sketching, including Photography Applied to Surveying.
Drill regulations, U. S. Army.	Practical Instruction in the Schools of the Soldier, Company and Battalion—Infantry. Practical Instruction in School of the Cannoneer—Light Artillery; and School of the Trooper—Cavalry. Practical Instruction in Small-Arms Target Practice.
Practical military engineering.	*Blunt's Firing Regulations for Small Arms. Practical Instruction in the Construction of Ponton, Spar, and Trestle Bridges.

Books marked thus * are for reference.

*Course of study and books used at the Military Academy—Continued.*THIRD YEAR.—*Second class.*

Department.	Course of study, text-books, and books of reference.
Natural and experimental philosophy.	Michie's Analytical Mechanics. Michie and Harlow's Practical Astronomy. Young's General Astronomy. Michie's Elements of Wave Motion relating to Sound and Light. Bloxam's Chemistry (seventh edition). Tillman's Elementary Lessons in Heat (second edition). Tillman's Essential Principles of Chemistry.
Chemistry, mineralogy and geology.	Tracy's Anatomy, Physiology, and Hygiene. Thompson's Elementary Lessons in Electricity and Magnetism. Tillman's Elementary Text-Book of Mineralogy. Le Conte's Elements of Geology (third edition). Free-hand Drawing and Landscape, in black and white. Mechanical and Architectural Drawing, in ink and colors.
Drawing.....	Constructive Details: Ordnance Constructions. *Reed's Topographical Drawing and Sketching, including Photography Applied to Surveying.
Drill regulations, U. S. Army.	United States Army Artillery Drill Regulations. Tidball's Manual of Heavy Artillery Service, U. S. A. United States Army Cavalry Drill Regulations. United States Army Infantry Drill Regulations. Practical Instruction in the Schools of the Soldier, Company and Battalion—Infantry. Practical Instruction in School of the Cannoneer—Sea Coast Artillery; and in the Schools of the Trooper, Troop, and Squadron—Cavalry.
Practical military engineering.	Practical Instruction in the Construction of Ponton Bridges; in laying Gun Platforms, and in the Construction of Revetments and Obstacles. Practical and Theoretical Instruction in Military Signaling.

FOURTH YEAR.—*First class.*

Civil and military engineering and science of war.	Wheeler's Civil Engineering. Wheeler's Field Fortifications. Mercur's Mahan's Permanent Fortification, edition of 1887. Wheeler's Military Engineering (Siege Operations). Mercur's Military Mining. Mercur's Elements of the Art of War. Mahan's Stereotomy.
Modern languages...	*Royal Engineers, Aide-Mémoire, Parts I and II. Knapp's Spanish Grammar, Knapp's Spanish Readings. *Seoane's Neuman and Baretti's Dictionary.
Law	Davis's International Law. Cooley's General Principles of Constitutional Law in the United States. Winthrop's Abridgment of Military Law. General Orders No. 100, A. G. O., 1863.
History, geography, and ethics.	Swinton's Outlines of the World's History. *Labberton's New Historical Atlas and General History.
Practical military engineering.	Practical Instruction in the construction of Ponton, Trestle, and Spar Bridges; in the preparation and application of Siege Materials; and in laying out Field and Siege Works. Practical Instruction in Military Reconnoissances, on foot and mounted; in Field Telegraphy, Night Signaling, and the use of the Heliograph. *Ernst's Manual of Practical Military Engineering.
Natural and experimental philosophy.	Practical Instruction in Astronomy.
Drill regulations, U. S. Army.	Practical Instruction in the Schools of the Soldier, Company and Battalion—Infantry; of the Trooper, Troop, and Squadron—Cavalry; and of the Battery—Artillery.
Ordnance and gunnery	Bruff's Gunpowder and Interior Ballistics. Metcalfe's Ordnance and Gunnery. Ingall's System of Exterior Ballistics.

Books marked thus * are for reference.

UNITED STATES MILITARY ACADEMY BAND.

WEST POINT, N. Y., *June 6, 1894.*

SIR: In compliance with request of your honorable committee, I beg to submit the following particulars concerning the band stationed at the United States Military Academy:

The band as at present constituted consists of one teacher of music (a civilian under contract) and twenty-four musicians, rated and paid as follows, viz:

1 teacher of music, per annum	\$1,080
6 first-class musicians (enlisted), each \$408 per annum.....	2,448
6 second-class musicians (enlisted), each \$240 per annum	1,440
12 third-class musicians (enlisted), each \$204 per annum.....	2,448

Total	7,416
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These amounts are included in the United States Military Academy appropriation bill.

My experience here has convinced me that the above classification is productive of great discontent amongst the musicians, for the reason that, while a similar amount of work is required from all and there exists but little distinction in grades of ability, the second and third classes are disproportionately compensated as compared with payments made to members of the first class.

The first-class men, apparently contented with their condition, reenlist at the expiration of each term of service; but those of the lower classes almost always apply for discharge at the end of the three years' term. Thus membership of second and third classes is subject to frequent change, much to the injury of the band's efficiency. And this brings in view the fact that the stipend of \$20 and \$17 a month, paid to second and third class men, respectively, is so small as to seriously hamper efforts made to keep those grades full with the class of musicians necessary to effectively perform the important duties required of the band at this post.

Musicians in civil life equal with the grade required here receive much higher rates of compensation for their services, as may be perceived from the statement that regiments of the National Guard of New York City when in camp pay the musicians of their respective bands at the rate of \$40 a man per week for duties precisely akin to those performed by the United States Military Academy band during the months of June, July, and August, not to say anything of the remaining nine months of the year. For such a period, covering about thirteen weeks, and for a band of twenty-four musicians, the expenditure of the regiments referred to would be, including bandmaster at \$80 per week, \$13,520; or nearly twice as much for service of twenty-four musicians for three months as the United States Government pays a similar number of musicians for twelve months' work.

It is generally admitted that to maintain a good band it is necessary to have a sufficient number of properly qualified musicians adequately paid. The United States Military Academy band is too small and three-fourths of its members are inadequately paid. To overcome these defects I would suggest the band be increased in membership and pay and that the present classification be modified. To me it appears advisable the band should consist of forty musicians, as follows:

10 first-class musicians at, each, \$35 per month, per year	\$4,200
30 second-class musicians at, each, \$30 per month, per year	10,800

15,000

representing an increase in the appropriation of only \$8,664 a year. This addition of musicians and money would enable the authorities to maintain a band at this post fully capable of performing the duties required, and in manner such as to be commensurate with the dignity of the United States Military Academy and to fitly represent the military music of the nation.

In conclusion, I would suggest the incumbent of the position of teacher of music be accorded the rank, pay, and allowances of a commissioned officer, chiefly for purposes of discipline, and also to obtain for him certain social advantages from which, as a civilian, he is at present excluded.

I am, sir, respectfully,

ARTHUR A. CLAPPÉ,
Teacher of Music, United States Military Academy.

Hon. JOHN J. DAVIS,

Chairman Miscellaneous Affairs.

(Through Superintendent United States Military Academy.)

UNITED STATES MILITARY ACADEMY.

ANNUAL REPORT
OF THE
SUPERINTENDENT U. S. MILITARY ACADEMY.

HEADQUARTERS U. S. MILITARY ACADEMY,
West Point, N. Y., September 24, 1894.

The ADJUTANT-GENERAL, U. S. ARMY,
Washington, D. C.:

SIR: I have the honor to submit this my annual report for the Military Academy for the year ending September 1, 1894:

PERSONNEL.

The number of officers and instructors on duty at West Point September 1, 1894, was 8 professors, 1 associate professor, 53 commissioned officers, 1 swordmaster, and 1 teacher of music, a total of 64. (See roster appended, marked A.) The number September 1, 1893, was 66. The decrease during the year was effected by a reduction of 1 in the department of tactics and 1 in the department of law. In all, 11 officers joined during the year and 13 were relieved.

By the act approved July 26, 1894, it was provided that "hereafter no graduate of the Military Academy shall be assigned or detailed to serve at said Academy as a professor, instructor, or assistant to either within two years after his graduation, and so much of the act of June 30, 1882, as requires a longer service than two years for said assignments or details is hereby repealed." This change in the law by widening the field of selection for instructors will be of much advantage to the Academy. There are many young officers quite competent to teach, particularly in the departments of mathematics and of modern languages, who have had less than four years' service since graduation.

The number of cadets present and absent September 1, 1894, was 322, including 2 foreigners receiving instruction by special authority of Congress in each case. The number September 1, 1893, was 318, including 3 foreigners. During the year 34 were discharged for deficiency in studies, 1 for deficiency in discipline, 1 was dismissed, 8 resigned, 1 (a foreigner) was withdrawn, and 54 graduated; while there were admitted in all at the three examinations held in March, June, and August, 101, and 2 of those discharged were reinstated.

For the three examinations referred to there were appointed in all 304 candidates, including 112 alternates. Of these 40 failed to appear and 159 were found not duly qualified, either mentally or physically, or both. Of the remaining 105 who passed, 12 were alternates whose

principals also passed and for whom there were therefore no vacancies, leaving 93 who were regularly admitted. Of those rejected by the medical board, 8 were subsequently admitted on probation. In many cases the candidates had been rejected at previous examinations.

The experience of former years has been similar to this, and shows clearly that it is not practicable to keep the number of cadets up to the maximum authorized by law, and that there will always be many vacancies. The number now authorized is 371, omitting the foreigners, an excess of 51 above the number actually belonging to the Academy. It is desirable, I think, from every point of view, that the Academy be worked up to the full capacity of its present plant. It should furnish all the officers for our Army in time of peace, which it can not now do, and if in addition it could send into civil life each year a few young men trained as its graduates are the country would be the gainer by many times the trifling additional cost of their education. A moderate increase in the number of cadets authorized by law is accordingly recommended; such, for example, as would be obtained by appointing 2 at large from each State, to be nominated by the Senators representing the State in Congress.

ACADEMIC DEPARTMENTS.

The departments of philosophy, drawing, mathematics, chemistry, etc., history, etc., engineering, law, modern languages, tactics, practical military engineering, and of ordnance and gunnery have maintained the high standard of instruction for which they have always been noted. While the heads of these departments have not failed to keep abreast of all advances made in their special branches of knowledge, and to introduce improvements when opportunity offered, the changes in the majority of them have been of a minor character, and do not call for special mention here.

The time left vacant in the first-class course by the improvement and condensation of the department of modern languages, referred to in my last annual report, was divided between the departments of law, of history, etc., of tactics, and of ordnance and gunnery, giving to the first 19, to the second 22, to the third 12, and to the fourth 6 additional recitations, to take effect when the present third class reaches the first-class year.

The department of law is the only one headed by a full professor that is not provided with an assistant professor having the pay of captain mounted. It seems but just that this department should be placed upon the same footing in this respect as the others. I recommend that legislation authorizing the appointment of an assistant professor of law be solicited.

THE LIBRARY.

There were added to the library during the last fiscal year 953 volumes, and 250 pamphlets (books containing less than 100 pages). There are now on hand 37,015 bound volumes and 5,578 pamphlets, besides many valuable manuscripts, maps, and portraits. The library has entirely outgrown the space heretofore allotted to it. As stated last year, one of the most pressing needs of the Academy is the reconstruction internally of the library building, by which it shall be made fireproof, and shall provide proper space for a convenient arrangement of the books and for reading rooms. It may be added that the necessity is more pressing this year than it was last, and will continue to become more and more so each year.

The growth of the library has made necessary also a reorganization of its management. The officer of the Academy who, under the regulations is the librarian, can give only a general supervision to its affairs. Upon the librarian's assistant must devolve the labor of arranging and cataloguing new new books, of keeping the records, of being present during a large part of the day to issue and receive books and periodicals, and of preserving order. By a rare piece of good fortune the Academy managed in 1844 to secure the services of an enlisted man, Private André Freis, who was able to perform these services satisfactorily, and who did perform them for nearly half a century. Recognizing the importance of the duties, Congress began in 1871 to appropriate annually \$1,000 for his compensation in addition to his pay and allowances as enlisted man. He died on the 8th of March last, respected and lamented by all. The library had grown from about 13,000 volumes in 1844 to nearly its present dimensions, and he had grown up as a librarian with it. It was quite impossible to find an enlisted man competent to replace him. A man of education, devoted entirely to books, familiar with foreign languages, of systematic habits, knowing where to place his hand upon any book or periodical which may be called for, is needed as librarian's assistant. Dr. Otto Plate, a civilian, was appointed to the position, and has given entire satisfaction. The money available for payment of his salary was the annual appropriation of \$1,000. This amount having been originally fixed upon as an addition to the salary otherwise received by the incumbent, is manifestly not sufficient when constituting, as it now does, the entire salary of the librarian's assistant. It should be increased to \$1,500 per annum.

A copy of my order* announcing the death of Private Freis is hereto appended, marked B. A tasteful monument to his memory is in course of erection here, to be paid for by subscriptions contributed by officers of the Army.

The report of the librarian is hereto appended, marked C.

HEALTH.

The general health of the command was good. No death occurred among the cadets or among the officers or their families. Two deaths occurred among the enlisted men, and nine among civilians residing or visiting upon the post. In general the sanitary condition of the post is good. Some further extension of the improvements in plumbing and sewerage are contemplated. The barrack of the engineer company is overcrowded, making it necessary to place some of the men in tents during the summer. The report of the post surgeon is hereto appended, marked D.

DISCIPLINE.

The state of discipline of the corps has been generally excellent. It was necessary to convene courts-martial several times during the year, resulting in the dismissal of 1 cadet, the resignation of 1, and the suspension of 3. The usual discipline was maintained in the other portions of the command by the usual methods.

ACCOUNTS AND SUPPLIES.

The system of keeping the accounts and of furnishing the cadets with supplies continued essentially as heretofore reported. An abundance of good healthy food in sufficient variety was furnished at an average

* Omitted.

cost of slightly less than 52 cents per man per day. Clothing, books, and other articles were furnished of good quality and at low rates. After careful investigation a new pattern of shoe was adopted which has thus far given entire satisfaction. It is well-shaped to the foot, light, flexible, and durable, and presents a neat appearance. A high shoe is provided for midwinter and for riding, but the constant use of high shoes by young men having a tendency to weaken the ankle, the standard shoe is low. Considerable dissatisfaction was found with the work of the laundry during the summer months, when the work was heaviest. Among other changes it was found necessary to return to the old system, by which each cadet is charged for the work done, instead of dividing the total expenses of the laundry equally among the entire corps. Attention is invited for details to the report of the treasurer and quartermaster and commissary of cadets hereto appended, marked E.

ARTILLERY.

Further progress was made in replacing guns and carriages which had become obsolete with those of modern pattern. Important additions were made to the list of models and sample guns for the general theoretical instruction of cadets. For details, attention is invited to the report of the instructor of ordnance and gunnery, hereto appended, marked F.

The work of constructing new permanent platforms in the seacoast battery for a new 8-inch rifle, a new 12-inch breech-loading mortar, and 3 front pintle platforms has been begun.

The drivers for the light battery are obtained from the cavalry detachment. This service has not been popular with the cavalry soldiers. Their instruction and service as drivers is additional to their regular duties, and is under officers different from their regular officers. It involves considerable wear and tear of clothing, for which they should receive compensation. I recommended last year that they be paid 30 cents each per day extra for the time during which they are employed upon the extra duty, the total amount required for the 28 men concerned being \$840 for the year. The appropriation bill for the current year contains an item of \$560 for this purpose. In future appropriations the amount should, I think, be increased to \$840, as originally recommended.

I beg leave to repeat my remarks of last year upon the subject of the band, the master of the sword, and the adjutant of the Academy, as follows, viz:

BAND.

By the act of March 3, 1877, the Military Academy band was reduced to 1 teacher of music and 24 enlisted men, which is its present authorized strength. Of the enlisted men 6 receive \$34 per month, 6 \$20, and the remaining 12 \$17, with the usual allowances of enlisted men. At the time of this reduction the band consisted of 1 teacher of music and 40 enlisted musicians, of whom 10 received \$34 and the remaining 30 received \$30 per month, with the usual allowances of enlisted men. Since that date every superintendent of the Academy, with perhaps one exception, and many or all boards of visitors have recommended an increase of the band. To anyone familiar with music it needs no argument to prove that the present numbers and pay are not sufficient. Is a good band really necessary to the practical efficiency of the Academy, is the only question which can be asked. The

answer is plain when the purpose which the band subserves is considered. Military pomp has a serious and practical object—the cultivation of the military spirit. It is in the same category with patriotic songs, discipline, and monuments to dead heroes. There is no more essential part of it than good music. I recommend that the band be restored to the numbers and pay which it had before the reduction in 1877. I recommend, further, that the leader receive the rank, pay, and emoluments of a second lieutenant of infantry. The increase is desired not for the purpose of gratifying an idle vanity or merely to provide pleasure, but to improve the finer polish given to the finished product of the Academy.

MASTER OF THE SWORD.

The swordmaster is also the instructor in gymnastics and swimming. He is a civilian, appointed by the Secretary of War. The present incumbent has worked up an admirable course of gymnastics for the corps of cadets. His system of calisthenics has been adopted by the War Department for the use of the Army. He is required to preserve discipline and to exercise control of cadets while under his instruction. It would greatly strengthen his hand if he should have military rank, and, in view of the great and increasing importance of his department, I recommend that legislation be solicited giving him the rank, pay, and emoluments of a first lieutenant of infantry.

ADJUTANT OF THE ACADEMY.

The Adjutant of the Academy is also secretary of the academic board, and upon occasions of ceremony acts as aide-de-camp to the superintendent. His duties are at least as important as those of an assistant professor, and they are more onerous, while his personal expenses are greater. It seems but just that the officer holding this position should receive the pay of captain, mounted, as in the case of assistant professors. Legislation to that effect is recommended.

ATHLETICS.

Upon assuming command here in the spring of 1893, I found that athletic sports among cadets were receiving a degree of attention that was unknown at the periods of my former service at the Academy. A match game of football had been played with the cadet midshipmen of the U. S. Naval Academy each year for three years in succession, giving to that game in particular an extraordinary interest here, and attracting the attention of the Army at large and of the Navy, as well as of the general public. To aid in defraying the expenses of these sports, which are very considerable, an Army Officers' Athletic Association had been formed, having a membership of several hundred officers and ex-officers of the Army. All of the professors and nearly all of the officers stationed here were members. I learned, in September, that plans had been made for the autumn season, which included engagements with teams from other institutions to play match games here, and the employment of special instructors to train the cadets in football. These plans had been made, or at least begun, in the previous winter and spring. Apparently it was assumed that the War Department would permit the game at Annapolis to be repeated. That there were serious objections to this seemed to me evident. Yet the benefits to be derived from the game were so obvious, the desire to

play the Annapolis match after the defeat of the year before was so intense, and the matter had gone so far that I determined to make no opposition to the match game, and to defer coming to any definite conclusions as to its merits until observation should enable me to weigh more carefully its relative advantages and disadvantages.

This course having received the approval of the Major-General Commanding the Army, the preparations were continued. Under the authority contained in your telegram of November 23, 31 cadets were permitted to visit Annapolis, where the game was played December 2. A few days later, December 12, I submitted a special report discussing the question at length in the light of all the information that I had been able to collect. Extensive extracts from that report are hereto appended marked G. My conclusions were that football as controlled here had been beneficial to scholarship and an aid to discipline, and should receive a proper degree of encouragement, but that the match game with the Naval Academy had done much to undo these good results, and would if continued entirely undo them, and being objectionable otherwise should not be permitted to recur. On the 26th of February the honorable Secretary of War issued the following instructions, viz: "The game of football will be permitted at the U. S. Military Academy under such regulations as may now or hereafter be prescribed by the superintendent. He may permit teams from other institutions to visit West Point and to play there with the Academy's team; but the team of cadets is prohibited from engaging in matches elsewhere." Like instructions in regard to the Naval Academy and its football team were issued by the honorable Secretary of the Navy. Engagements have been made with teams from several civilian colleges to play here this season, a special instructor has been employed, and so far as can now be observed the general interest in the game has not been injuriously affected by the prohibition of the Annapolis match.

WATER SUPPLY.

At the date of my last annual report the subject of location of the new reservoir was receiving careful study. All available sites on or near the Government reservation were examined and compared with each other, the questions of capacity, convenience, cost, quality of water, and legal complications being duly considered. A full report upon the subject, dated November 17, 1893, was submitted by Capt. James L. Lusk, Corps of Engineers, the officer in charge of the water supply, and was forwarded to the War Department with my letter of December 7, 1893, together with a report by Lieut. Col. J. W. Clous, upon the legal questions involved in the consideration of the various plans. The result of the investigation was to confirm the conclusion reached by my predecessor, that the best site available was that known as the Fort Putnam swamp. It was found, however, that a masonry dam must be constructed instead of an earthen dam, and that the old road in the vicinity must be submerged, and must therefore be replaced by a new one. The estimate of cost had to be increased to \$63,635. The project having been approved by your letter of January 29, 1894, the work was begun in April. A fine road located above the flow line and upon the side of the basin opposite to the old one has been constructed, the site of the reservoir cleared of timber, and the earth excavation for the dam has been completed. In addition to the sums provided in the appropriation bills for the last year and for the current year, a further appropriation of \$17,375 will be needed.

The prolonged drought of the past summer again caused anxiety concerning the supply of water, and measures of economy in its use became necessary early in August. Fortunately at the beginning of the summer the reservoirs were all full. Thus far the post has escaped with some sacrifice of lawns and some deterioration of the quality of the water due to the low stage of Round Pond. In connection with the water supply attention is invited to the report of the instructor of practical military engineering hereto appended, marked H.

BUILDINGS AND GROUNDS.

The report of the post quartermaster, who is also quartermaster and disbursing officer of the academy, is hereto appended, marked I.

In the act approved July 26, 1894, it was provided, "That nothing contained in the act making appropriation for the support of the Military Academy for the fiscal year ending June 30, 1891, shall be interpreted to prevent the number of men in the Detachment of Army-service men of the Quartermaster's Department therein provided for being made as high as 150, if in the opinion of the Secretary of War such number be required." The necessity of an increase in the number of men, now 117, of this detachment has been long felt, but there appeared to be a doubt whether the increase could be made under the old law. The legal objection has now been removed.

Some progress was made during the year in settling the controversy with the contractors over the new gymnasium building. The second contractor, John Moore, finally completed the small items of work to which reference was made in my last report, and received his final payment. The first or failing contractor has been dilatory in signing the necessary papers, but it is expected that a settlement with him can be effected at an early day.

The progress made during the year upon the new academy building has been slow, and no portion of it is ready for occupation. The last extension of time for completing the contract expired on the 15th instant. The contractors are now incurring the penalty of \$20 per day provided in the contract. The outside walls are completed sufficiently to give the architectural effect of the finished building, excepting of course the high tower. It seems to be the unanimous opinion of all who see it that the building is a credit to the institution and to the architect. The high tower is needed to complete the architectural design as well as to display prominently the clock. An estimate for building it is submitted. An estimate is submitted also for furniture, including gas fixtures for the building.

The new building for sinks and bathrooms for cadets, the new boiler house, the extension of the gas works, and the quarters for steward of the soldiers' hospital were all completed during the year, and fair progress was made upon the quarters for unmarried officers, and the set of quarters for a married officer.

The general condition of the roads upon the reservation was greatly improved by reballasting with gravel. The work of regrading and reconstructing the main road from Highland Falls, to give it a proper character as the principal entrance to the post, was begun and is still in progress. An estimate is submitted for a new guardhouse, of permanent character and appropriate design, to be placed near the junction of the main road with the back road, about an eighth of a mile from the southern boundary.

An important addition to the equipment for roadmaking is a steam road roller, for which an appropriation was made in the last act. This, with the stone crusher procured last year, will enable us to gradually macadamize and make permanent all the roads upon the reservation.

Work upon the battle monument made good progress during the year, and is now nearing completion as it was designed. But the figure of Victory at the top has been so severely criticised that the executive committee has decided to have it taken down and replaced by another figure. This action was taken with due deliberation upon the advice of the architect, given after consultation with the sculptor and other artists. The final completion of the monument will accordingly be deferred until next spring.

In September, 1893, the board of trustees of the memorial hall, anticipating considerable delay in the preparation and selection of plans, selected as the architects of the building Messrs. McKim, Mead, and White, of New York, although the funds bequeathed by Gen. Cullom were not then available. This selection having received the approval of the honorable Secretary of War, the gentlemen referred to visited West Point and gave the board the benefit of their advice in the selection of a site. A careful contour survey was made of the ground. In April last the architects presented a number of sketch plans, from which the board selected one with modifications. Fuller drawings were made and an estimate of cost obtained, when it was found that the cost of the building, according to that plan, would far exceed the amount available. New studies were undertaken, the result of which was laid before the trustees a few days ago. It is hoped that plans can be perfected in time to let a contract this autumn, and to begin the work of construction in the spring of 1895. The entire amount of the bequest, \$250,000, has been paid into the Treasury, by Gen. Cullom's executors, except \$12,500 retained by them to await the decision of the courts in the matter of the 5 per cent inheritance tax. The State of New York levies a tax of 5 per cent upon bequests, but the legality of the tax in this case is disputed. The Government has contested the tax before the surrogate and has been defeated. It has taken the matter into the supreme court of the State and has been defeated, and has since taken it to the court of appeals, where it now lies awaiting decision. An act relinquishing the tax was passed by the legislature of the State at its last session, this action being very largely due to the efforts of Lieut. Col. Clous, professor of law. The act was vetoed by the governor (see Appendix K). The site selected for the building and approved by the War Department is on the slope northeast of the library, between Dade's monument and the cavalry barracks.

ESTIMATES.

The estimates for the next fiscal year include some costly improvements, such as the clock tower for the new academy building, furniture for that building, the reconstruction of the library building and the completion of the new reservoir. Among the less costly items are a guardhouse for the south gate, a commissary storehouse, additional quarters for officers, quarters for the teacher of music and for the steward of the cadet hospital, a stable for officers' horses, a sidewalk from the south dock to the top of the hill, a piazza for the cavalry barracks, two public latrines for the use of visitors, new and enlarged gas mains, and moving a building erected some forty years ago and now an obstruction. There are numerous items of minor improvements. In all they

foot up to an amount considerably larger than the appropriations for the current year, but they do not include anything which is not in my judgment for the good of the Academy. The necessity of each is explained in the remarks accompanying the estimates. They are all commended to favorable consideration.

CONCLUSION.

In conclusion I have to report that the Academy is in a flourishing condition. It is passing through an era of improvement so far as its equipment and outward physical condition are concerned, due to the greater liberality of Congress in recent years. The curriculum, both theoretical and practical, is the result of many years' experience, and has proved itself well adapted to the objects of the institution. The professors and officers are accomplished, each in his sphere, and are devoted to their work, and deserve well of the Government.

Very respectfully, your obedient servant,

O. H. ERNST,
Colonel of Engineers, Superintendent.

LIST OF APPENDICES.

C—Report of librarian.

D—Report of post surgeon.

E—Report of treasurer and quartermaster and commissary of cadets.

F—Report of instructor of ordnance and gunnery.

G—Report of superintendent upon athletics, December 12, 1893.

H—Report of instructor of practical military engineering.

I—Report of the quartermaster of the Military Academy.

K—Veto message of the governor of New York.

C.

U. S. MILITARY ACADEMY LIBRARY,
West Point, N. Y., September 11, 1894.

To the ADJUTANT, U. S. MILITARY ACADEMY:

SIR: In accordance with your request, dated West Point, N. Y., August 21, 1894, Circular No. 39, I have the honor to submit the following report in regard to the library:

The vacancy in the position of assistant librarian, caused by the death of André Fries, was filled by the appointment of Dr. Otto Plate, PH. D. (Strassburg). He was first employed to assist in classifying the library and to continue the card cataloging of its books on November 21, 1894, and his attainments and fitness for the position were found to be such that he was subsequently appointed by the superintendent as assistant librarian. He has already introduced many modifications in the classification and arrangement of the library that prove to be highly advantageous, and I am satisfied that his appointment is a very commendable one.

The additions to the library from September 1, 1893, to August 31, 1894, have been 953 bound volumes and 250 pamphlets, making a total of 37,015 volumes and 5,578 pamphlets at present on the shelves of the library.

I can not add anything to my report of last year in regard to the great necessity of renovating the library building, except to say that this necessity has become more urgent and pressing. I am of the opinion that the making of the building fireproof and adapting it to a more general use by officers and cadets is a matter of the first importance, and that every effort should be made to secure a favorable consideration of an application for an appropriation for this purpose.

Very respectfully, your obedient servant,

P. S. MICHIE,
Professor of Philosophy, Librarian.

D.

UNITED STATES MILITARY ACADEMY,
SURGEON'S OFFICE, CADET HOSPITAL,
West Point, N. Y., September 11, 1894.

To the ADJUTANT, U. S. MILITARY ACADEMY,
West Point, N. Y.:

SIR: In compliance with the requirements of Circular No. 39, headquarters U. S. Military Academy, August 21, 1894, I have the honor to submit the following report of the work done in the medical department of this station for the year ending June 30, 1894:

The following medical officers have been on duty during the year:

Philip F. Harvey, major and surgeon, July 1, 1893, to June 30, 1894.

C. N. B. Macauley, captain and assistant surgeon, February 5, 1893, to May 10, 1894.

Frederick P. Reynolds, first lieutenant and assistant surgeon, July 1, 1893, to June 30, 1894.

The duties of the medical officers have been divided generally as follows:

The post surgeon has charge of the cadet hospital and cadet sick calls, general administrative affairs of the medical department of the Academy and post, and of such officers and their families as may call on him for professional advice and treatment.

The first assistant has charge of the soldiers' hospital and such officers and their families as may call on him for treatment.

The second assistant has professional charge of the families of enlisted men and of civilian employes and their families living on the reservation, and of such officers and their families as may call upon him for professional treatment.

The mean strength of the command for the year is shown by the following table:

Officers	53.23
Cadets	275.84
Enlisted men	337.08
Civilians, officers' families, etc	289.00
Civilians, soldiers' families, civilian employes, and their families	476.08
Total	1,431.23

The following table shows the number of cases treated during the year:

Officers.....	16
Cadets.....	364
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Officers, injuries	1
Officers, diseases.....	15
Cadets in hospital, injuries.....	59
Cadets in hospital, diseases.....	305
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Total	380
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Cadets treated in quarters and excused from some duty	3, 696
Cadets treated in quarters, not excused	924
Enlisted men in hospitals and quarters, injuries.....	104
Enlisted men in hospital and quarters, diseases	392
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Total	5, 116
Civilians treated (men, women, and children)	1, 493
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Total cases treated.....	6, 609

There were performed during the year 212 vaccinations and revaccinations. Headache, ephemeral fever, eye affections, diseases of the digestive organs, epidemic influenza, and tonsilitis were prevalent forms of sickness requiring treatment in the cadet hospital.

The following number of births occurred during the year:
Males, 8; females, 13; total, 21.
There were no deaths among officers or their families during the year.
There were 2 deaths among the enlisted men, viz:
Michael Graber, private, Army service detachment; age, 44 years; accidental. Cause of death, peritonitis and shock, resulting from being crushed by a rock. Date of death, December 25, 1894.

Andrew Freis, private, Army service detachment; age, 72 years. Cause of death, pulmonary tuberculosis. Date of death, March 8, 1894.

The following deaths occurred among civilians on the post during the year:
(1) King, George, colored; age, 55 years; died from shock and hemorrhage (internal, from ruptured lung), by fall from scaffolding in riding hall; July 29, 1893.
(2) Craney, Robert M.; age, 24 years; cause of death, abscess of middle-ear, followed by acute meningitis; August 23, 1893.
(3) Johnston, Ernest V.; age, 4 years; died from fracture of the skull and injury to the brain, resulting from a fall from the stone-wall embankment; April 25, 1894.
(4) Fitch, Lena; age, 3 years; female; diphtheria; July 11, 1893.
(5) Koch, Charles W.; 1½ years old; male; cholera infantum; July 13, 1893.
(6) Dillon, Mary; 6 months old; female; cholera infantum; August 11, 1893.
(7) Brewster, Mattie; female; puerperal eclampsia; October 23, 1893.
(8) Bryde, Anna M.; age, 68 years; pneumonia; January 6, 1894.
(9) Rodgers, Ellen; age, 74 years; bronchitis; February 16, 1894.

There were 4,925 prescriptions compounded at the cadet hospital and 2,482 at the soldiers' hospital during the year.

The following points have been particularly dwelt upon by the medical officers in their monthly sanitary reports during the year: July, 1893, Maj. P. F. Harvey, surgeon, U. S. Army, reported that an unusual amount of sickness prevailed amongst the corps of cadets during the month, ranging from 30 to 60 cases each day. They were mostly of a minor character, such as disorders of digestion, chafed feet, etc.

Report of a case of diphtheria in the family of a private in the Army service, 6th of July, 1893, with death of patient. There was no extension of the disease (Capt. C. N. B. Macauley, assistant surgeon, U. S. Army).

August, 1893, report of number of cadets excused from duty because of sore feet while in attendance at the Columbian Exposition (Maj. P. F. Harvey, surgeon, U. S. Army).

November, 1893, report of disposal of refuse from the cadet mess, with recommendations (Surg. Harvey).

Report of inadequate latrine accommodations at the engineer barracks, also of defective ventilation of building (Assistant Surg. Macauley).

March, 1894, report of methods used in baking meats in the cadet mess (Surg. Harvey).

June, 1894, report of ivy poisoning (Surg. Harvey).
The following sanitary reports were submitted by the medical officers of the post during the year:

September 15, 1893, report inspection of cells of main guardhouse, by Maj. P. F. Harvey, surgeon, U. S. Army, made in compliance with instructions of the superintendent.

September 28, 1893, report of Maj. P. F. Harvey, surgeon, U. S. Army, regarding the heating of the rooms in the cadet barracks.

December 5, 1893, report of Maj. P. F. Harvey, surgeon, U. S. Army, on injuries among the corps of cadets caused by riding, football, and gymnastics during the period from September 1, 1893, to November 30, 1893.

December 4, 1893, report of analysis of water by the chemist of the Surgeon-General's office.

December 9, 1893, report of Maj. P. F. Harvey, surgeon, U. S. Army, supplemental to report of December 5, on injuries received by cadets in riding hall.

The card system of recording the medical history of each cadet has recently been introduced in the hospital, and it is hoped that it will enable the medical department of the post to furnish, with the least possible delay and labor, the complete physical history of a member of the corps of cadets from the date of his admission to the Academy.

A set of hospital steward's quarters is needed near the cadet hospital, as the room in the administrative part of the hospital now occupied by this noncommissioned officer is required for the use of the member of the hospital corps. An estimate of the cost of construction of these quarters has been submitted to the superintendent; also one for general repairs to the soldiers' hospital and of the cadet hospital.

The soldiers' hospital is of recent construction and is well equipped for the treatment of all medical and surgical cases, but the cadet hospital has not been provided with a modern operating room, which is absolutely necessary for the treatment of all cases requiring surgical interference in a hospital, and for this reason the equipment of this hospital can not be considered abreast of the times, so far as this department is concerned; therefore the conversion of the room in the southeast corner of the third floor of the administration building of the hospital into an operating room is urgently advised, and an estimate for the new work required to accomplish this purpose has been submitted.

Recently, and with little expense, a small room in the cadet hospital has been fitted up as a laboratory devoted to bacteriology, pathology, and chemistry, and, as it has already been supplied with an outfit of apparatus, it is believed that this addition to the equipment of the hospital will be of material advantage in the study of the pathological condition of the patients admitted for treatment.

Very respectfully, your obedient servant,

GEO. H. TORNEY,
Major and Surgeon, U. S. Army, Post Surgeon.

E.

HEADQUARTERS U. S. MILITARY ACADEMY,
OFFICE OF TREASURER, QUARTERMASTER AND COMMISSARY OF CADETS,
West Point, N. Y., September 10, 1894.

The ADJUTANT, U. S. MILITARY ACADEMY,
West Point, N. Y.:

SIR: I have the honor to submit the following relative to my duties as treasurer of the U. S. Military Academy, quartermaster and commissary of cadets, for the fiscal year ending June 30, 1894, referring to each duty under its heading.

TREASURER OF THE U. S. MILITARY ACADEMY.

The business of the treasurer's office during the year necessitated the keeping of twenty-eight separate accounts, with—

1. The assistant treasurer of the United States, New York City.
2. The Athletic Association.
3. Balances paid.
4. The barber.
5. Cadet cash.
6. The cadet hospital.
7. The cadet laundry.
8. The cadet quartermaster's department.
9. The cadet subsistence department.
10. The confectioner.
11. The corps of cadets.
12. Damages, ordnance.
13. Dancing.
14. The dentist.
15. Deposits.
16. The Young Men's Christian Association.
17. The Dialectic Society.
18. The equipment fund.
19. Expressage.
20. Gas.
21. Hops and german.
22. Miscellaneous fund.
23. Miscellaneous items.
24. Oaths.
25. The paymaster, U. S. Army.
26. Periodicals.
27. The photographer.
28. Policing barracks.

I have explained in previous reports the necessity for and the character of these accounts.

These accounts were regularly inspected every two months by an officer detailed for that duty, as well as by the special committee of the Board of Visitors.

The financial statement of the treasurer U. S. Military Academy, dated May 15, 1893, which was the last prior to the expiration of the fiscal year 1892-'93, was as follows:

Assets.		Liabilities.	
Assistant treasurer.....	\$34,557.99	Athletic Association.....	\$222.75
Balances paid.....	157.28	Cadet hospital.....	182.97
Cadet cash.....	98.00	Cadet laundry.....	4,280.11
Dentist.....	135.00	Cadet quartermaster's department..	10,333.81
Trust funds or bonds.....	20,000.00	Cadet snbsistence department	1,054.55
Cash on hand.....	873.65	Corps of cadets	11,381.42
		Deposits.....	200.00
		Young Men's Christian Association.	14.94
		Dialectic Society	20.85
		Equipment fund.....	28,100.00
		Miscellaneous fund.....	24.52
Total	55,821.92	Total	55,821.92

The following statement of receipts and disbursements, under each account, exhibits the totals or such between May 15, 1893, the date of the above statement, and May 21, 1894, the date of the last statement prior to the end of the last fiscal year, six bimonthly settlements having been made during the year, namely:

No.	Purpose.	Disbursements.	Receipts.
1	Assistant treasurer.....	\$161,785.15	\$161,977.32
2	Athletic Association.....	1,434.36	1,304.81
3	Balances paid.....	17,225.93	17,383.21
4	Barber.....	594.15	594.15
5	Cadet cash.....	15,178.65	15,201.65
6	Cadet hospital.....	2,527.54	2,344.57
7	Cadet laundry.....	9,894.62	7,190.32
8	Cadet quartermaster's department.....	66,691.53	60,403.77
9	Cadet subsistence department.....	61,138.35	60,843.63
10	Confectioner.....	226.00	226.00
11	Corps of cadets.....	190,883.38	188,775.63
12	Damages, ordnance.....	.35	.35
13	Dancing.....	515.55	515.55
14	Dentist.....	986.00	1,011.00
15	Deposits.....	18,064.03	18,568.03
16	Young Men's Christian Association.....	175.46	175.20
17	Dialectic Society.....	654.65	708.12
18	Equipment fund.....	11,540.00	13,862.00
19	Expressage.....	42.76	42.76
20	Gas.....	1,244.76	1,244.76
21	Hops and Germans.....	1,587.41	1,516.83
22	Miscellaneous fund.....	33.85	23.61
23	Miscellaneous items.....	179.58	179.58
24	Oaths.....	26.50	26.50
25	Paymaster.....	162,145.15	162,145.15
26	Periodicals.....	74.55	74.55
27	Photographer.....	29.00	29.00
28	Policing barracks.....	5,471.87	5,471.87
	Total.....	730,351.13	730,841.92

From this statement it is seen that certain accounts appear and disappear, no balances being carried.

The following statement exhibits the expenditures for purposes designated, during the fiscal year, together with the sums expended during each of the last two preceding years, for the same purposes, viz:

Purpose.	1894.	1893.	1892.
Athletic Association.....	\$1,434.36	\$279.81	.....
Barber.....	594.15	533.55	\$540.25
Confectionery.....	226.00	452.00	316.00
Dentistry.....	986.00	674.00	954.00
Young Men's Christian Association.....	175.46	16.86	.....
Dialectic Society.....	654.65	447.83	445.10
Expressage.....	42.76	32.84	44.20
Gas.....	1,244.76	1,668.36	1,641.17
Oaths.....	26.50	30.15	24.00
Periodicals.....	74.55	73.42	92.00
Photographs.....	29.00	84.00	51.00
Policing barracks.....	5,471.87	5,599.55	5,866.63
Support of cadet hospital.....	2,527.54	1,961.51	1,928.61

The following is the statement of the treasurer at date May 21, 1894, the date of the last settlement of his accounts and inspection thereof prior to the end of the last fiscal year:

Assets.		Liabilities.	
Assistant treasurer	\$34,365.82	Athletic association.....	\$98.20
Cadet cash	75.00	Cadet laundry.....	1,575.81
Dentist.....	110.00	Cadet quartermaster's department..	13,048.05
Hops and germans.....	70.58	Cadet subsistence department.....	750.83
Trust funds (bonds).....	20,000.00	Corps of cadets.....	9,273.67
Cash on hand.....	1,864.44	Deposits.....	704.00
		Young Men's Christian Association.	14.68
		Equipment fund.....	30,422.00
		Dialectic society.....	80.32
		Miscellaneous fund.....	14.28
Total.....	55,985.84	Total.....	55,985.84

The amount of the equipment fund, as given above, was reduced because of the settlement of the accounts of this year's graduating class by the sum of \$10,512.

The members of the class which graduated this year deposited on entering, each, on an average, \$106.30; when going on furlough they received, each, an average amount of \$103.52; on graduating they received, each, an average of \$240.93; this sum included an average equipment fund of \$194.66, and shows that the average saving during the last two years at the Academy was \$46.27.

It has been the custom for several years past to settle, approximately, the accounts of members of the furlough class to August 15 of their furlough year, and to advance them when they go on furlough such sums as they might be out of debt for use on furlough.

It has become apparent that members of the furlough class exercise during their third-class year undue economy in refraining from supplying themselves with necessary clothing and other articles, to the end that they may have as much money for furlough as possible, expecting to supply themselves on their return from furlough.

This plan throws on the latter half of their course at the Academy expenses which should have been borne during the first half and diminishes the amounts otherwise due them at graduation.

To remedy this matter, I have the honor to recommend that hereafter the accounts of furlough men be settled, approximately, to July 31 of their furlough year, and that they receive only such sums as they may be out of debt on such settlement. This will insure them their August pay for the purpose of part paying for the articles they find it necessary to purchase on their return from furlough and will increase the sums due them at graduation.

The members of this year's furlough class deposited on entering the Academy (average each) \$94.52; they received when going on furlough (average), \$120.05.

The average deposits of candidates or new cadets entering during the year was \$98.57. Two new cadets made no deposits, and they will have to be borne by the treasurer until such time as, under the exercise of the strictest economy, their savings from their pay will cancel their indebtedness.

Ex-Cadet Urtecho, of Nicaragua, is indebted to the Academy in the sum of \$152.34. Since he was admitted to the Academy by act of Congress, I think that Congress should appropriate the sum of his indebtedness and settle the same, and recommend that it be asked to do so.

The plan adopted in settling the accounts of graduates and furlough men prior to the date of their departure is eminently successful.

CADET QUARTERMASTER'S DEPARTMENT.

During the year the following articles of clothing were manufactured, viz:

Dress coats.....	213	Officers' trousers	36
White jackets.....	183	Gymnasium trousers	1
Flannel trousers.....	80	Blouses	465
Civilian vests	3	White trousers.....	868
Officers' blouses.....	3	Tennis trousers	16
Overcoats	151	Civilian coats.....	3
Gray trousers	608	Civilian trousers	3
Riding trousers.....	80		

There were repaired during the year:

Dress coats.....	320	Civilian vests	179
Gray trousers	1,140	Gloves	340
Civilian coats	179	Blouses	694
Socks	1,498	Riding trousers	58
Chevrons made and sewed on.....	702	Civilian trousers	179
Overcoats	282	Shoes	1,372
White trousers.....	1,266		

The new uniform shoes give, as far as I can learn, the best satisfaction.

The floors of the halls in the cadet quartermaster's department building are made of concrete and cement. The floor in the main hall is constantly requiring repairs. The one on the third floor is in bad condition, as is also the one on the ground floor.

I request permission to repair with cement the first or ground-floor hall, to place ordinary tiling or stone flagging on the floor of third-story hall, and to cover the main hall with marble or tile, at a cost not to exceed 75 cents per square foot, and to defray such cost from the cadet quartermaster's department fund, the one by which the portion of the building containing these halls was erected.

The fund, in cash, goods, and accounts due, on June 30, 1893, amounted to \$42,775.98. On June 30, 1894, it amounted to \$43,130.88, an increase of \$350.90 during the year as against a loss of \$1,013.48 during the year previous.

It is impossible to adopt any percentage on the business of the department, such that the profits will exactly meet the expenses, and therefore the diminution or increase of the fund in any year to a slight extent gives no concern, as it is a matter depending entirely upon the business of the department, and one which rights itself in a series of years.

I recommend that there be no change at present in the percentages charged, which are 4 per cent on all articles other than clothing, and 10 per cent on clothing; all on face of net invoice.

CADET SUBSISTENCE DEPARTMENT.

The condition and working of the cadets' mess is very satisfactory.

The average daily cost of subsistence per cadet during the year was a fraction less than 52 cents, and it was slightly less than the year previous.

The character and quality of the food served was the best obtainable, while the variety was as great as it was possible to obtain under the expenditure noted, an expenditure as great as the pay of a cadet will admit. This charge for subsistence would have been still less had it not been for the extraordinary expense incurred in maintaining a training table for candidates for the foot-ball team and for the entertainment of visiting teams.

I have the honor to recommend that no training table may be hereafter authorized. Besides the extra expense, such a table imposes additional obligations upon the mess employes, makes a distinction in the subsistence of the cadets, subjects the commissary of cadets to being requested by the "coach" to do, or to refrain from doing, certain things in connection with the training table, and, as it has heretofore appeared, all to no purpose. Should teams from civilian organizations visit West Point, I earnestly request that the practice of entertaining them at the cadets' mess be no longer continued. This will work no hardship on them, as they can obtain their meals at the hotels in this vicinity or at Mr. Denton's restaurant.

It may be said that the presence of visiting teams may be secured for a less sum of money if they are entertained at the cadets' mess. Possibly that may be the case, but it certainly can not be considered just that the mess should bear an expense chargeable to an association provided with funds.

CADET LAUNDRY.

The laundry building and machinery are in good condition. The washing turned out during the year, especially in reference to white trousers, has not been satisfactory.

In my last annual report I showed that the number of articles laundered during the fiscal year 1892-'93 exceeded the number laundered during the previous fiscal year by 128,746 pieces. During the fiscal year ending June 30 last the work of the laundry was increased over the work of 1892-'93 by 75,766 pieces, and this, too, exclusive of the work done for the cadet hospital.

Seven thousand nine hundred and sixty pieces were washed for the cadet hospital during the last fiscal year as against 4,082 the year previous.

The average number of cadets present during the last fiscal year was, in round numbers, 23 greater than during the fiscal year of 1892-'93, but such increase in the corps will not account for the increase in the number of pieces sent to the laundry.

Such increase, without endeavoring to account for it, has taxed the laundry to its utmost capacity under the former organization of its forces, and although additional labor, such as is obtainable in this section, has been employed, has prevented satisfactory work being turned out.

Remedial measures, with which you are acquainted, have been taken, and it is confidently expected that there will be an increased weekly improvement in the work of the laundry.

A room in which soiled clothing can be received, assorted, and stored until required for the washing machines is greatly needed at the laundry. This matter will be brought to your notice as soon as it has been maturely determined as to the size and location of said room.

Respectfully submitted.

WM. F. SPURGIN,
*Captain Twenty-first Infantry, Treasurer U. S. Military Academy,
Quartermaster and Commissary of Cadets.*

F.

WEST POINT, N. Y., August 28, 1894.

The ADJUTANT, U. S. MILITARY ACADEMY:

SIR: In accordance with instructions I have the honor to submit the following report of the principal operations in the department of ordnance and gunnery at the U. S. Military Academy during the fiscal year ending June 30, 1894:

LABORATORY.

The work at laboratory includes the painting and caring for the three light batteries and the machine and rapid-fire guns, and also the siege and seacoast batteries and Battery Knox.

The carriages of all these batteries have been painted and the guns varnished and lacquered. The fireworks for the graduating and 4th of July exercises have been prepared. Numerous repairs have been made to the different batteries involving considerable work in the machine shop, and repairs have also been made to the cadet equipments and to the foils, fencing muskets, and broadswords used in the gymnasium.

Models of all the service projectiles, full size in wood, have been completed and lettered for use. A new wood floor has been laid in the barrack room, a new partition put up, and new marble washstand put in. A new wood floor has also been laid in the upper room of the middle building, and a concreted floor in the lower store room. A supply of water has been introduced into the laboratory yard with a new hydrant. The old shingle roof on equipment shed has been replaced by a tin roof and a new door put on the middle building.

A Pratt & Whitney lathe, 16-inch, and a pillar-shaper, for which appropriations were made by the last Congress, have been placed in position in the machine shop, with new pulleys and belting, and the shop is now well fitted for any ordinary work. Drawings for the new text book in Ordnance and Gunnery are in progress, and some of the plates for the book have been received from the Moss Engraving Company, New York. The work on this book will probably be completed during the current fiscal year. Drawings for the section room have also been made of the more complicated ordnance material studied by cadets. This work will be continued till it is complete.

The trophy guns at Trophy Point have been secured to their skids so as to prevent disarrangement, and the skids themselves mounted on stone foundations laid in cement. The same has been done with the large Mexican mortars. This work will be continued until finished.

Models have been made in wood of the boring and rifling tools used in gun manufacture, and sample boards of cartridges, fuses, primers, etc., have been prepared illustrating the different steps in the manufacture of these various articles.

FIRING GROUNDS.

All the wires at the firing grounds have been rearranged and systematized, and drawings made showing all the connections. New targets have been erected for the small arms with a cast-iron bullet-proof shield mounted on a stone foundation. The stone wall around the firing grounds has been relaid and completed. Four new

Springfield rifles, prepared especially at the Springfield Armory for taking pressures, and furnished with pressure gauges, have been received; also a new firing rest. Each ballistic instrument now has its own gun, and no delay is necessary in firing, and the facilities for taking velocities and pressures are better than ever before, affording an opportunity to each cadet to become thoroughly acquainted with the practical methods of working ballistic instruments.

The property belonging to the ordnance museum which was shipped to the Chicago exposition has been returned in good order.

ADDITION TO ARMAMENT.

During the year there have been received one 8-inch steel breech-loading rifle, with its spare parts and appliances, for repair; and also an 8-inch barbette carriage, complete, for this gun. As the appropriation for the platform was not sufficient to build it, the carriage was mounted temporarily on a wood platform, from which it can be readily moved into position as soon as its platform is ready. Work upon this platform will be begun at an early day.

Three new front-pintle barbette carriages for 8-inch converted rifles have also been received and will replace the old centre-pintle carriages of obsolete pattern as soon as the platforms for them are ready.

The Maxim automatic machine gun and the Nordenfelt rapid-fire gun, mentioned in the last report, have been received. The Maxim gun, upon test, did not work satisfactorily, and the company is now replacing some of the parts by new ones.

SMALL ARMS AND AMMUNITION.

Two new .30-caliber rifles have been supplied by the Ordnance Department for the instruction of cadets, and the class of 1894 were instructed in the working, dismounting, and assembling of the gun, and velocities were taken with it at the instrument house.

MODELS.

The various models of instruments and ordnance material which have been made at the laboratory have already been spoken of. The following models of service guns made of steel have been received during the year:

- One 3.60 mortar, one-tenth size.
- One 3.60 mortar, breech mechanism, one-half size.
- One 3.20 field gun, one-tenth size.
- One 3.20 field gun, breech mechanism, one-half size.
- One 5-inch siege gun, complete, one-tenth size.
- One 10-inch seacoast gun, complete, one-tenth size.
- One 12-inch steel mortar, complete, one-tenth size.

These models were made at the Watervliet arsenal, and are intended to be used for purposes of instruction in the section room and also for the museum. A new appropriation has been obtained for completing the models of all service guns, and also for models of their carriages.

RECOMMENDATIONS.

I have the honor to recommend that the senior assistant instructor of ordnance and gunnery receive the pay of assistant professor, and that a provision to this effect be recommended for insertion in the next Military Academy bill. The duties of senior assistant instructor in this department are exactly the same as those of the corresponding officer in other departments. The course extends over the same period of time, and in addition to his academic duties, this officer has others connected with the care and preservation of ordnance property at the post which do not fall to the assistant professors in other departments. In addition to this, his rank is generally such as would entitle him to this position and pay were he serving in any other department of instruction at the Academy.

I would also recommend that steps be taken to procure a sample arm and its ammunition from each of the leading European powers, with a description of its mechanism, for the instruction of cadets and for the museum.

Very respectfully, your obedient servant,

LAWRENCE L. BRUFF,
Captain Ordnance Department, U. S. Army,
Instructor of Ordnance and Gunnery.

G.

Extract from the report of the superintendent U. S. Military Academy to the Adjutant-General of the Army, upon the subject of athletic sports as practiced at the Academy.

HEADQUARTERS U. S. MILITARY ACADEMY,
West Point, N. Y., December 12, 1893.

It may be assumed at the outset that the physical development of cadets is sufficiently provided for in the regular curriculum, or, if not, that improvements in that direction should be made in a more systematic way than by the mere encouragement of voluntary athletic sports. If needed at all, they should be made to apply to all cadets. Football is to be considered as a recreation and a sport, and not as a means of instruction. The important questions concerning it are: (1) What are its effects upon scholarship? (2) What are its effects upon discipline? (3) Is it unduly dangerous to life and limb? (4) Is it too expensive? (5) Should the annual match game between the cadets and the cadet midshipmen be permitted?

I.—EFFECT UPON SCHOLARSHIP.

Any innocent amusement which during the hours set aside for recreation will take the mind of the cadet absolutely away from his books will benefit him. He will return to his studies refreshed and invigorated, and the net result of his day's work will be greater than if his entire time had been devoted to them. Football accomplishes this object more completely than any other known game. Its effects in that respect are not confined to the actual players, but extend to practically the entire corps of cadets. From one-quarter to two-thirds of the corps may be seen looking on or taking part in the daily practice games, while with all it is a subject of absorbing interest and conversation, and at the match games on Saturday afternoons nearly the entire corps are present, exhibiting every sign of the most enthusiastic enjoyment. Is the excitement too great? Does it extend beyond the hours of recreation and interfere with studies? If it does, the effect should be noticeable among the 31 cadets constituting the first and second teams and supernumeraries. These have been in regular training, have devoted all their spare moments since the 1st of September to practice, and have undoubtedly given more thought to the game than any other cadets. To obtain specific information with reference to their progress in studies, I addressed to the members of the academic board a circular letter of which a copy is inclosed, marked A. I invited them at the same time to express their views upon the subject of athletics in general as now practiced at this place. Copies of their replies are inclosed, marked B, C, D, E, F, G, H, I, K, L, and M. Their perusal shows wide differences of opinion.

In the first class are 6 players. Of these—

(1) *Cadet A.*—Lost 5 places in engineering; gained 6 places in ordnance and gunnery; gained 6 places in history; lost 19 places in law.

(2) *Cadet Bn.*—Held his own in engineering; lost 1 place in ordnance and gunnery; held his own in history; held his own in law.

(3) *Cadet Be.*—Gained 2 places in engineering; gained 15 places in ordnance and gunnery; gained 6 places in history; gained 7 places in law.

(4) *Cadet C.*—Lost 13 places in engineering; lost 4 places in ordnance and gunnery; lost 12 places in history; lost 20 places in law.

(5) *Cadet H.*—Lost 2 places in engineering; gained 12 places in ordnance and gunnery; held his own in history; gained 10 places in law.

(6) *Cadet R.*—Gained 2 places in engineering; gained 7 places in ordnance and gunnery; held his own in history; lost 10 places in law.

In the case of Cadet Bn. there was not much room for further improvement for he was already at or near the head of his class, being first in general merit at the last June examination. He held his own. Of the others, two showed decided improvement, one held his own, one showed loss in two subjects and gain in two, with a preponderance in loss, and one showed decided loss in all. In this class upon the whole was more gain than loss.

In the second class are 9 players. Of these—

(7) *Cadet A.*—Lost 3 places in philosophy; gained one place in chemistry.

(8) *Cadet B.*—Gained 1 place in philosophy; lost 6 places in chemistry.

(9) *Cadet C.*—Lost 9 places in philosophy; lost 30 places in chemistry.

(10) *Cadet D.*—Stood stationary (foot) in philosophy; gained 1 place in chemistry.

(11) *Cadet H.*—Gained 11 places in philosophy; gained 19 places in chemistry.

(12) *Cadet Sh.*—Gained 4 places in philosophy; lost 15 places in chemistry.

(13) *Cadet Sr.*—Lost 6 places in philosophy; gained 10 places in chemistry.

(14) *Cadet Sy.*—Lost 6 places in philosophy; lost 22 places in chemistry.

(15) *Cadet St.*—Held his own (second in his class) in philosophy; gained 7 places in chemistry.

In this class two cadets lost places in both branches of study. Both of them had been over last year's course twice, having been turned back in June, 1892. As is usual in such cases a decided fall in class standing occurred after entering upon a new course of studies, and would have occurred independently of football. All of the others gained in one branch of study while losing in the other, or held their own in one while gaining in the other, or gained in both. Among them is Cadet St., who stands second in his class in philosophy and who held his own. In this class the gain in scholarship exceeded the loss.

In the third class are 12 players. Of these—

(16) *Cadet By.*—Gained 30 places in mathematics; gained 7 places in modern languages.

(17) *Cadet Rt.*—Lost 9 places in mathematics; lost 17 places in modern languages.

(18) *Cadet Dm.*—Lost 8 places in mathematics; gained 23 places in modern languages.

(19) *Cadet Hy.*—Gained 2 places in mathematics; gained 11 places in modern languages.

(20) *Cadet K.*—Lost 11 places in mathematics; lost 25 places in modern languages.

(21) *Cadet L.*—Lost 5 places in mathematics; lost 7 places in modern languages.

(22) *Cadet M.*—Gained 2 places in mathematics; gained 6 places in modern languages.

(23) *Cadet N.*—Gained 1 place in mathematics; lost 7 places in modern languages.

(24) *Cadet R.*—Lost 8 places in mathematics; lost 2 places in modern languages.

(25) *Cadet Sn.*—Lost 13 places in mathematics; lost 6 places in modern languages.

(26) *Cadet Sy.*—Lost 8 places in mathematics; gained 4 places in modern languages.

(27) *Cadet W.*—Lost 35 places in mathematics; gained 6 places in modern languages.

In this class three gained in both branches of study, five lost in both branches, and four gained in one while losing in the other. Among them was Cadet Sn., who stood first in general merit at the last June examination. He lost standing. In this class the loss exceeded the gain.

In the fourth class are four players. As this class had not been arranged according to merit at the beginning of the term, there are no figures for determining the effect upon them except in the case of Cadet C., who, in the opinion of the professor, will be first in his class in mathematics, and who has the fourth best mark in English studies.

The figures given are of course not to be taken in any individual case as a direct measurement of the effects of football. The greater or less aptitude of the student for the new studies taken up in September always causes many variations in class standing. But taken as a whole they indicate that the general effect of the game upon the scholarship of those taking the most active part in it is not injurious. There are exceptions, but that is the general result. If not injurious to these, then the general net result to the entire corps of cadets must be beneficial, if my assumption be correct that complete distraction from books during the hours of recreation is beneficial.

This does not include the subsequent effect of the match game at the end of the season.

II.—EFFECT UPON DISCIPLINE.

There are no figures which can be used as an indication of the effect upon discipline as in the case of scholarship, but there are some considerations from which certain conclusions may be drawn. The discipline of the corps has been good and remains good. With very few exceptions the offenses are of a minor character, due to boyish heedlessness. I can not see that they are any more or less in number than they were formerly. But there are two offenses of not uncommon occurrence which have for many years defied the efforts of the authorities to eradicate them—smoking, and hazing new cadets.

At one time even the attempt to prevent smoking was abandoned, and for many years the practice was permitted. It is now forbidden, but the difficulty of enforcing the regulation is as great as ever. The training rules which the football players adopt while in training prohibit smoking. This, by demonstrating the value of the regulation, can not but aid in its enforcement.

Hazing new cadets has been the object of severe repressive measures for many years. Time and again the authorities have flattered themselves that it was eradicated, but new instances have not been slow to follow. Among the cadets who went to Annapolis this year were four members of the fourth class. They had been

selected by the cadets themselves. The search among the new cadets for their superior physical qualities which this implies can not but aid in reducing the tendency to hazing.

At first glance it might seem that if any special privileges were granted to football players it would be favoritism which would be resented by other cadets and would be injurious to discipline. It must be remembered that the players are selected by the cadets themselves, and not by the authorities. It is probable that many distinctions might be made without causing the nonplayers to consider the players more favored than themselves. As a matter of fact, however, the only distinctions have been that the players were provided with a special training table in the mess hall, were excused from marching to supper, in order to take that meal a little later than the others, and were permitted to go to Annapolis.

The special training table constituted a daily object lesson in the effect of sober living upon the human frame, which can hardly fail to be of much practical value.

Dress parades for the entire battalion were omitted during November. That ceremony at that season loses much of its practical value on account of the cold, since overcoats and benumbed fingers are not favorable to precision.

In all other respects the full programme of military and academic duty has been carried out by all.

The officers of the academy have, as a rule, taken a lively interest in the game, and have contributed largely by voluntary subscriptions toward paying its expenses. This has produced a kindlier feeling by the cadets toward their officers which I think is favorable to discipline.

The minor punishments in the way of deprivation of recreation hours becomes more potent as the value of those hours in the mind of the cadet is increased. The surplus animal spirits of the young men finding a vent in football are much less likely to find it in mischievous pranks.

Upon the whole I conclude that the game is an aid to discipline.

III.—DANGER TO LIFE AND LIMB.

The post surgeon has prepared at my request a statement of the casualties which occurred during the months of September, October, and November, in football, riding and gymnastics, which is inclosed marked N. Fifty-two casualties occurred in football, of which 9 were serious; 40 casualties occurred in riding, of which 2 were serious; 9 occurred in gymnastics, of which 1 was serious. Ultimate recovery is expected in all cases. During November 11 casualties occurred in football, and 34 in riding. A new class began riding in November. Among players elsewhere a number of fatal accidents during the same period were reported in the public press. With its present methods and rules the game appears to be dangerous to life and limb, but probably not much more so than riding, and much less so than coasting in winter or swimming in summer. This feature has attracted the attention of observers elsewhere, and the sentiment appears to be general that the methods of play must be changed. It is probable that the game will be less objectionable in that respect hereafter than it is now. It is perhaps unnecessary to state that the brutality which has been reported to have occurred at some places does not exist here. As played here the game is rough, with an element of danger, but not brutal.

IV.—EXPENSE.

The total amount expended this year in athletics was \$4,219.71, of which \$3,623.70 was devoted to football, including the cost of the training table, \$506.30 over and above the cost of ordinary board. Of the football expenses the cadets paid \$1,438.40, including the training table, and the remaining \$2,185.30 was contributed by the Army Officers' Athletic Association, or by subscriptions of the officers and professors stationed here. This latter subscription fell heavily upon some. Clearly cadets can not afford to play football without some outside assistance. There appears, however, to be no difficulty in procuring such sums of money as may be necessary.

V.—SHOULD THE ANNUAL MATCH GAME BETWEEN THE TWO NATIONAL ACADEMIES BE PERMITTED?

What has been said of the effects of football upon discipline and scholarship refers to the general effect during the three months prior to the match, and not to the match itself. The latter has undoubtedly for some days a bad influence upon both. The excitement attending it exceeds all reasonable limit. Whether the injurious effects at this time are sufficient to counterbalance the good effects obtained previously is somewhat a matter of speculation. I am inclined to think that thus far they have not been, but I should expect the excitement over this match, if it should

be regularly established, to increase from year to year, and eventually to result in unmistakable injury.

The argument in favor of the match is that some kind of match game with a foreign team at the end of the season is considered necessary to keep up the interest in the game. The season's work (or play) is the preparation for a contest. It is quite impossible for the cadets to compete upon equal terms with the students of other institutions such as Harvard, Yale, or Princeton (though they have played this year with teams from two of them), for the reason that those students give much more time to practice than the cadets can give.

This points to the Naval Academy as their natural and only real competitor. To stop the annual match will be to remove much of the vitality from a game which plays an important and, as I believe, useful part in the life of the cadet.

The four matches which have been played have engendered an intense rivalry, not without a shade of bitterness, which does not tend toward improving the relations between the two services.

The match constitutes a distinct and, in my judgment, dangerous departure from the traditions of this institution. The corps of cadets are required to accomplish more work in a given time than any other set of young men anywhere. They accomplish this without extraordinary exertion, because of the regularity of their lives and the continuity of their application. Absence from the restraints of West Point, brief though it be, renders them irksome for sometime thereafter. For this reason it has always been the rule to grant very few leaves of absence. With the exception of the furlough at the end of the second year they are never given, except in cases of emergency, and to a few specially meritorious cadets at Christmas as a reward for exemplary conduct. This system receives a violent shock from the match game. While 30 cadets are allowed to go to Annapolis to play football, it will not be easy to say to the cadet whose mother is ill or whose sister is to be married that the rules of the institution forbid his absence for even a day.

CONCLUSIONS.

My conclusions are that football as controlled here has been beneficial to scholarship and an aid to discipline, and should receive a proper degree of encouragement; but that the match game with the Naval Academy has done much to undo these good results, and will, if continued, entirely undo them, and being objectionable otherwise, should not be permitted to recur.

H.

WEST POINT, N. Y., *September 11, 1894.*

The ADJUTANT, U. S. MILITARY ACADEMY,
West Point, N. Y.:

SIR: Complying with the requirements of circular No. 39, headquarters U. S. Military Academy, West Point, N. Y., August 21, 1894, I have the honor to submit the following report concerning the operations of the department of practical military engineering for the year ending August 31, 1894:

INSTRUCTION OF CADETS.

The first, second, and third classes were under instruction during the year. The ground covered did not differ materially from that of the preceding year, as set forth in my report of September 11, 1893, with the exception that no interruption occurred similar to that due to the World's Fair.

COMPANY E, BATTALION OF ENGINEERS.

This company has furnished throughout the year a daily guard detail of from 10 to 12 men; has kept its barrack and barrack ground in repair and police; cultivated its garden; kept the 2 pontoon trains and the cadet boats in repair; completed 2 new pontoon boats and partially finished 3 others; and has kept the seacoast, siege, and mortar batteries, with Fort Clinton and Battery Knox, in order. It has assisted in the instruction of the cadets in practical military engineering, preparing the bridge and siege material.

A steam-heating plant has been installed in the barrack, with increased comfort and convenience to the men. The root house to the west of the barrack has been

entirely rebuilt and the one to the south adapted for use as an oil house. A new coal house to store fuel for the steam-heating plant is about completed and will result in saving the men much labor.

Estimates have been submitted for repairing the wash room and the latrine belonging to the barrack.

During May and June, 1894, the company completed the prescribed course of target practice, making a general figure of merit of 44.36, and qualifying 2 sharpshooters, 19 marksmen, and 26 first-class men out of a total of 84 classified.

Considering the interruption arising from the cadet reconnaissance in May, and the examination in June, the period allotted for the target season here is too short, and the company has no fair opportunity for practice.

Attention is invited to the accompanying table (A) which contains a résumé of the company's duties by months.

Acceptable recruits have not offered themselves as freely as last year, and the company is now 5 men below its authorized strength. Two desertions, both to the undoubted advantage of the company, occurred during the year.

The World's Fair detail of 2 noncommissioned officers and 1 first-class private returned to duty with the company on November 14, 1893.

The detail for submarine mining at Willets Point, has resulted in the instruction of 7 sergeants and 9 corporals during the year.

The physical condition of the men has been excellent and the discipline of the company good. The effects of the enlistment of a large proportion of young men for a short term is much the same as in other organizations. But few serious infractions of discipline have occurred.

For the purpose of taking part in the Memorial Day parade, on May 29, 1894, a detachment of 3 officers and 74 men went to New York on the night boat, returning the night after. The conduct of the men was exemplary in all respects.

During the labor troubles in July, 1894, the company was ready to move at an hour's notice, with practically its full strength.

WATER SUPPLY AND PIPE LINE.

The water was turned on from Round Pond on June 27, 1894, the gage then standing at 18 feet, corresponding to a full pond. The draft has since been steady, no rain of any benefit to the water supply having fallen since early in June. The stage of the water is about 10 feet at this time. If the precipitation for the next year proves to be much below the normal, there will probably be a scarcity next summer and fall.

The pipe line has rendered good service. An important leak was discovered and stopped near the old lime kiln in June, 1894. Another important leak has been discovered near the powder magazine and reported to the post quartermaster for repair. The brush wood was cut along the Round Pond pipe line last November, and the culverts and retaining walls repaired. A portion of the Cro' Nest Pond pipe line was taken up and relaid in a safer position.

The upstream face of the Cro' Nest Dam has recently been repointed.

NEW RESERVOIR.

A special report upon the question of a water supply for the post was submitted by me in November last. Of the projects submitted, the site at Fort Putnam Swamp was selected. Work on changing the road was begun in April and has since been completed. The new road is about 3,100 feet long and has a maximum grade of 7.5 per cent. The timber and brushwood have been cleared from the reservoir site, the earth excavation for the main dam completed, a channel dug to prevent floods from interfering with the work, and a ditch to drain the swamp; a new quarry is being opened, and a site prepared for sheds and shops; bids have been opened for tools and supplies, and the preparation of the rock for receiving the bottom and ends of the main dam is well under way. Present indications are to the effect that the cost of the main dam will probably somewhat exceed the original estimate.

GUN PLATFORMS.

The necessary appropriations for this work having become available, preparations have been made for proceeding with the construction as soon as the guns are dismounted. I have assigned Lieut. Patrick to the special charge of this work, and Lieut. Bromwell to assist me at the new reservoir.

NEW ACADEMIC BUILDING.

Good progress has been made on this building during the past year, but not enough to make up for the time previously lost. It is hoped that by January 1, 1895, the entire building may be occupied.

THE BATTLE MONUMENT.

This work has also advanced rapidly during the past year, and its principal features are completed. Questions have arisen concerning the figure of "Victory," and certain ornamentation around the base, which may considerably delay the final completion.

Very respectfully, your obedient servant,

JAS. L. LUSK,
Captain, Corps of Engineers, Instructor Practical Military Engineering.

	1893.				1894.							
	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.
Average strength of company.....	100	100	100	101	99	99	99	100	99	99	97	95
Average strength of guard detail.....	10	10	10	11	12	12	12	12	12	12	13	13
Fatigue days.....	26	26	25	25	26	24	27	25	26	26	25	27
Infantry drills.....	13	12	4	4	4	4	5	4	13	.....	8	13
Signaling drills.....	13	12	4	4	4	4	5	4	2	.....	8	13
Engineering drills.....	8	9	3	4	5	4	4	4	3	2	9	9
Gymnasium drills.....	13	12	7	8	9	8	9	8	3	2	.....	.....
Practice marches.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	1	.....
Average attendance at drills.....	40	36	41	38	47	39	41	42	44	52	49	46
Target practice days.....	.....	.....	.....	.....	.....	.....	.....	.....	23	21	.....	.....
Post school days.....	.....	.....	20	20	22	20	22	21	.....	.....	.....	.....
Average attendance at school.....	25	26	26	25	27	24

I.

U. S. MILITARY ACADEMY, QUARTERMASTER'S OFFICE,
West Point, N. Y., September 12, 1894.

The ADJUTANT U. S. MILITARY ACADEMY,
West Point, N. Y.:

SIR: In compliance with instructions contained in Circular No. 39, headquarters U. S. Military Academy, dated August 21, 1894, I have the honor to submit herewith the following report of the operations of the quartermaster's department, at West Point, N. Y., for the fiscal year ending June 30, 1894:

QUARTERMASTER'S DEPARTMENT, U. S. ARMY.

The duties pertaining to this department embrace procuring fuel, forage, and straw for public animals and for officers' private horses; stoves for heating part of the officers' and enlisted men's quarters; means of transportation, by land and water, for troops, animals, and public property; in furnishing the animals required for artillery, cavalry, and draft purposes, and in procuring and distributing clothing and equipage for the command. The following appropriations have been drawn upon, either for funds or supplies, to enable me to meet the demands made upon the department:

APPROPRIATION FOR REGULAR SUPPLIES.

No allotment was made, but funds were supplied to meet necessary demands, and were expended in the payment, under formal contracts, for fuel, forage, and straw, and stores required for sale to officers and issue.

APPROPRIATION FOR INCIDENTAL EXPENSES.

The sum of \$10,500 was allotted for the fiscal year. Of this amount \$9,739.81 were expended in payment for services rendered by civilian clerks and extra duty by enlisted men; \$760.17 were held to meet outstanding debts, and 2 cents surplus to be deposited to the credit of the Treasurer of the United States.

APPROPRIATION FOR ARMY TRANSPORTATION.

No allotment was made, but funds were supplied as necessity demanded, and expended in the payment of enlisted men on extra duty as mechanics and teamsters; transportation of funds, authorized purchases of quartermaster's stores, 5 horses, and traveling expenses of quartermaster agent. The sum of \$391.15 was held to meet outstanding indebtedness, and 5 cents to be deposited as surplus. The department was, on approved requisitions and quarterly estimates, supplied with wagons, harness, materials for their repair, and sundry other stores needed.

During the fiscal year 163,476 pounds of freight have been shipped, 47,318 pounds by railroad, 116,158 pounds by water, and transportation furnished by rail and water for 115 persons, and 1 horse.

APPROPRIATION FOR CLOTHING AND EQUIPAGE.

There was no allotment under this head. The sum of \$8 was supplied for inserting new linings in capes of overcoats of enlisted men; \$98.83 were received from sales to officers, and duly deposited as required by law.

APPROPRIATION FOR CAVALRY AND ARTILLERY HORSES.

The sum of \$16 was received from sale at public auction of one condemned horse, and the proceeds were deposited.

APPROPRIATION FOR SHOOTING GALLERIES AND RANGES.

Sixty-nine dollars and forty cents were supplied for repairs to the rifle range at the post in the disbursement of which there was a saving of 29 cents, which will be deposited. (For statement showing receipts, disbursements, etc., see appendix marked A.)

Formal contracts for regular supplies were entered into as follows:

David S. Wells, June 6, 1893, 1,900 tons anthracite coal; William Lewis, June 15, 1893, 150 cords hard wood; John Hamilton, October 11, 1893, 420 tons hay; William E. Dante, October 11, 1893, 680,000 pounds oats; John Moonan, October 13, 1893, 20 tons shorts, 47½ tons rye straw; Charles L. Rickerson, October 14, 1893, 10 tons middlings, 47½ tons rye straw.

DETACHMENT OF ARMY SERVICE MEN, QUARTERMASTER'S DEPARTMENT.

The enlisted men of this detachment have generally performed the various duties with which they have been charged in a satisfactory manner.

The recommendation made in my last annual report that the number of draft animals be increased from 37, now authorized, to 45, is renewed; the latter number being actually necessary to meet the increased demands.

QUARTERMASTER'S DEPARTMENT, U. S. MILITARY ACADEMY.

My duties in this branch are defined in paragraph 12, of the U. S. Military Academy regulations. The following table exhibits the receipt and disposition of public funds in my possession during the year:

Table showing the receipt and the disposition of funds under appropriations for the support of the U. S. Military Academy, during 1893-'94.

	Current and ordinary expenses.	Miscellane- ous items and inci- dental ex- penses.	Buildings and grounds.	New gym- nasium.	New academic building.	Total.
On hand July 1, 1893:						
Appropriation 1889.....				\$12,241.66	\$11,153.93	\$23,395.59
Appropriation 1892.....	\$971.64	\$97.58				1,069.22
Appropriation 1893.....	11,772.83	2,945.85	\$25,318.14			40,036.82
Deficiency:						
Appropriation 1893.....	200.00					200.00
Appropriation 1893-'94..	600.00		2,470.92			3,070.92
Received from Treasurer of United States:						
Appropriation 1889.....					135,000.00	135,000.00
Appropriation 1893.....			46,496.00			46,496.00
Refundment:						
Appropriation 1893.....	10.00					10.00
Received from Treasurer of United States:						
Appropriation 1894.....	78,387.85	25,737.50	76,000.00			180,125.35
Total	91,942.32	28,780.93	150,285.06	12,241.66	146,153.93	429,403.90
Disbursed:						
Appropriation 1889.....				5,149.69	122,469.35	127,619.04
Appropriation 1892.....	19.58	7.50				27.08
Appropriation 1893.....	6,090.87	2,805.05	67,718.74			76,614.66
Deficiency:						
Appropriation 1893.....	200.00					200.00
Appropriation 1893-'94..	357.00		1,217.62			1,574.62
Appropriation 1894.....	64,000.29	23,003.83	43,557.06			130,561.18
Deposited:						
Appropriation 1893.....	10.00					10.00
On hand June 30, 1894.						
Appropriation 1889.....				7,091.97	23,684.58	30,776.55
Appropriation 1892.....	952.06	90.08				1,042.14
Appropriation 1893.....	5,681.96	140.80	4,095.40			9,918.16
Appropriation 1893-'94..	243.00		1,253.30			1,496.30
Appropriation 1894.....	14,387.56	2,733.67	32,442.94			49,564.17
Total	91,942.32	28,780.93	150,285.06	12,241.66	146,153.93	429,403.90

THE BATTLE MONUMENT.

This work has also advanced rapidly during the past year, and its principal features are completed. Questions have arisen concerning the figure of "Victory," and certain ornamentation around the base, which may considerably delay the final completion.

Very respectfully, your obedient servant,

JAS. L. LUSK,
Captain, Corps of Engineers, Instructor Practical Military Engineering.

	1893.				1894.							
	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.
Average strength of company.....	100	100	100	101	99	99	99	100	99	99	97	96
Average strength of guard detail.....	10	10	10	11	12	12	12	12	12	12	12	12
Fatigue days.....	26	26	25	25	26	24	27	25	26	26	25	27
Infantry drills.....	13	12	4	4	4	4	5	4	13	8	13
Signaling drills.....	13	12	4	4	4	4	5	4	2	8	13
Engineering drills.....	8	9	3	4	5	4	4	4	3	2	9	9
Gymnasium drills.....	13	12	7	8	9	8	9	8	3	2
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Average attendance at drills.....	40	36	41	38	47	39	41	42	44	52	49	46
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Appropriation 1894.....	14,387.56	2,733.67	32,442.94			49,564.17
Total	91,942.32	28,780.93	150,285.06	12,241.66	146,153.93	429,403.90

Contracts entered into by me during the year, and those made in previous years and remaining in force this fiscal year, were as follows:

- (1) J. E. & A. L. Peunock, May 18, 1891, new academic building.
 - (2) Cassidy & Son Manufacturing Company, October 27, 1892, gas pendants, cadet barracks.
 - (3) Jeremiah J. Kennedy, February 22, 1893, enlarging the gas plant.
 - (4) William McMeekin, April 24, 1893, new sinks and bath rooms, cadet barracks.
 - (5) Westmoreland Coal Company, June 24, 1893, 1,200 tons gas coal.
 - (6) David S. Wells, June 24, 1893, 75 tons cannel gas coal.
 - (7) A. S. Swords & Co., June 24, 1893, 2,200 tons anthracite egg coal, 800 tons anthracite stove coal, 300 tons anthracite chestnut coal.
 - (8) William McMeekin, July 7, 1893, boiler house and boiler, complete.
 - (9) Thomas M. Campbell, September 11, 1893, steam-heating apparatus in quarters No. 35.
 - (10) William McMeekin, September 11, 1893, 2-story addition to quarters No. 35.
 - (11) Edward Engelskircher, September 11, 1893, repairs, married enlisted men's quarters.
 - (12) A. C. Smith, October 13, 1893, boiler and steam-heating, engineer barracks.
 - (13) William McMeekin, October 26, 1893, one set of officers' quarters.
 - (14) A. H. Catlin, October 27, 1893, steam-heating plant in quarters No. 27.
 - (15) Thomas J. Gilroy, April 2, 1894, one set hospital stewards' quarters.
 - (16) Thomas J. Gilroy, June 26, 1894, unmarried officers' quarters.
- Nos. 1, 13, 15, and 16 were not completed at the close of the year.

U. S. MILITARY ACADEMY GAS WORKS.

During the fiscal year the receipts and expenditures pertaining to the plant has been accounted for in the special contingent fund, which appears in this report. The work of enlarging and increasing the gas plant, under the contract with Mr. J. J. Kennedy, dated February 22, 1893, was completed during the year, and the works are now in excellent condition and capable of supplying good gas ample to meet all requirements.

SPECIAL CONTINGENT FUND, U. S. MILITARY ACADEMY.

This fund is derived from the rent of certain buildings at this post; from sales of gas to officers, cadets, and civilians residing here; sales of coke and coal tar to non-residents of the post, etc.

The receipts and expenditures on account of this fund for the fiscal year ending June 30, 1894, were as follows:

	Gas works.	Rents.	Total.
On hand July 1, 1893.....		\$1, 298. 97	\$1, 298. 97
Received.....	\$6, 867. 21	3, 116. 24	9, 983. 45
Total	6, 867. 21	4, 415. 21	11, 282. 42
Disbursed.....	4, 545. 16	4, 281. 30	8, 826. 46
Balance on hand June 30, 1894.....	2, 322. 05	133. 91	2, 455. 96
Total.....	6, 867. 21	4, 415. 21	11, 282. 42

On the 12th day of August, 1893, camp equipage was forwarded, in charge of a quartermaster agent, to Chicago, Ill., for use of the corps of cadets, U. S. Military Academy, on the grounds of the World's Columbian Exposition.

The camp was in readiness for the command upon its arrival.

Two days after the departure of the corps for West Point the equipage was shipped from Chicago, and arrived here on the 1st day of September, 1893, in good condition.

On the evening of June 9, 1894, about 8 o'clock, a fire was discovered in the gas-coal house at the post. The fire spread with great rapidity, and notwithstanding every effort was made to check it, the whole roof of the building, together with the tramway track over it, was destroyed. The cause of the fire was unknown.

Respectfully submitted.

W. H. MILLER,
Captain and Assistant Quartermaster, U. S. Army,
Disbursing Officer, U. S. Military Academy.

Amounts received, disbursed, etc., under the various appropriations for the Quartermaster's Department, U. S. Army, during the fiscal year 1894.

	Regular supplies.	Inciden- tal expenses.	Army transpor- tation.	Cloth- ing and equip- age.	Shoot- ing gal- leries and ranges.	Cavalry and artil- lery horses.	Total.
Appropriations for 1890-'91:							
Received from sales.....						\$10.00	\$10.00
Deposited						16.00	16.00
Appropriations for 1891-'92:							
Received from Quartermaster- General		\$2.55					2.55
Disbursed.....		2.55					2.55
Appropriations for 1892-'93:							
Balance on hand July 1, 1893...	\$5,407.17	823.39	\$481.15	\$5.00			6,716.71
Received from Quartermaster- General	16.94	70.55					87.49
Received from sales.....	152.42			2.14			154.56
Total.....	5,576.53	893.94	481.15	7.14			6,958.76
Disbursed.....	5,424.11	893.94	341.05	4.00			6,663.10
Deposited.....	152.42		140.10	3.14			295.66
Total.....	5,576.53	893.94	481.15	7.14			6,958.76
Appropriations for 1893-'94:							
Received from Quartermaster- General	24,248.85	10,500.00	4,824.45	8.00	\$69.40		39,650.20
Received from sales.....	4,064.62			98.83			4,163.45
Total.....	28,312.97	10,500.00	4,824.45	106.83	69.40		43,813.65
Disbursed.....	21,708.58	9,739.81	4,433.25	8.00	69.11		35,958.75
Deposited.....	4,064.62			98.83			4,163.45
Outstanding indebtedness	2,539.77	760.17	391.15				3,691.09
For deposit .....		.02	.05		.29		.36
Total.....	28,312.97	10,500.00	4,824.45	106.83	69.40		43,813.65

K.

STATE OF NEW YORK, EXECUTIVE CHAMBER,
Albany, March 15, 1894.

To the ASSEMBLY: Assembly Bill No. 162, entitled "An act to release to the Government of the United States all right, title and interest which the people of the State of New York may have by virtue of chapter 399 of the laws of 1892, or any other act taxing legacies, in and to a certain legacy given to the said the Government of the United States, in and by the last will and testament of Bvt. Maj. Gen. George W. Cullum, late of the city of New York, deceased, is herewith returned without approval.

I am convinced that the enactment of this bill would be a bad precedent to establish for future legislation. The facts leading to the introduction and passage of the bill are these:

By the will of Gen. George W. Cullum, deceased, a legacy of \$250,000 was bequeathed to the Government of the United States for the erection of a memorial hall at West Point. Upon this legacy the surrogate of the county of New York assessed a collateral inheritance tax of \$8,755. This order was appealed from by the Government of the United States and the executors of the decedent, and both the general term and the court of appeals* have affirmed the surrogate's order, holding that the State is justly entitled to the tax.

This bill would set aside the decisions of the courts and release the interest of the State in the tax. No good reason has been advanced why this exemption should be granted, and the bill is a type of particularly obnoxious special legislation.

ROSSELL P. FLOWER.

*NOTE.—The governor was in error. When the bill was introduced no decision had been rendered by the Supreme Court in general term. At the date of the message the case had not been carried to the court of appeals. It is still (September 24, 1894) pending in that court. (O. H. E.)

**FOURTH REPORT OF THE BOARD OF ORDNANCE
AND FORTIFICATION.**

REPORT OF THE BOARD OF ORDNANCE AND FORTIFICATION.

BOARD OF ORDNANCE AND FORTIFICATION,
WAR DEPARTMENT,
Washington, D. C., October 31, 1894.

The SECRETARY OF WAR:

In compliance with the provisions of the statute making appropriations for fortifications and for the armament thereof, etc., approved February 24, 1891, the Board of Ordnance and Fortification submits herewith, for transmission to Congress, its annual report for the year ending October 31, 1894.

PERSONNEL.

The Board records with profound regret that, for the first time since its organization, its membership has been broken, by the death of Maj. Clifton Comly, U. S. Ordnance Department.

The following extract from the proceedings of the Board is here inserted as a suitable expression of its sentiments toward the deceased:

WAR DEPARTMENT,
Washington, D. C., April 27, 1894.

Upon assembling of the Board the president, Maj. Gen. J. M. Schofield, commanding U. S. Army, stated that with deep regret he announced to the Board the death, since its last meeting, of Maj. Clifton Comly, ordnance member of the Board. He died at his post of duty at Governors Island, New York Harbor, on April 17, having been stricken with paralysis resulting from cerebral hemorrhage, while engaged in his duties at Sandy Hook Proving Ground.

In view of this announcement the Board desires to express, and to place in its permanent records, a testimonial of its appreciation of the great loss which it, in common with the Army of the United States, has sustained. Maj. Comly was an officer who loved and was devoted to his profession. No one gave more intelligent or efficient assistance in the work of the Board; no one could be more regretted. In the service none could be more missed. In his personal relations and intercourse such were his sterling and manly qualities that no words can fitly express the sense of our loss.

On May 13, 1894, Capt. Charles C. Morrison, Ordnance Department, long the efficient Recorder of the Board, died at his station at Governors Island, New York, after a brief illness.

Capt. Morrison was detailed as Recorder of the Board at its organization, October 25, 1888, and remained such until his death, except during the period from January 14, 1890, to April 20, 1892. He was a most faithful and efficient officer, whose early death was a shock as well as a source of sorrow to all associated with him.

To fill the vacancies so created, Maj. Frank H. Phipps, Ordnance Department, was, on May 3, detailed as a member of the Board, by Special Orders No. 105, Headquarters of the Army; and, by Special Orders No. 120, Headquarters of the Army, under date of May 22, 1894, Capt. James C. Ayres, Ordnance Department, was detailed as Recorder of the Board, to take effect July 1, 1894.

Lieut. Fremont P. Peck, Ordnance Department, was, by the same order, temporarily assigned to duty as Recorder of the Board until the

arrival of Capt. Ayres. These officers entered upon their respective duties accordingly.

No other changes have occurred in the personnel of the Board during the year.

NEW LEGISLATION AFFECTING THE BOARD.

1. In the act making appropriations for fortifications and other works of defense, etc., approved August 1, 1894. the following provision was made:

To enable the Board of Ordnance and Fortification to procure and test one ten-inch pneumatic disappearing gun carriage of the Pneumatic Gun Carriage and Power Company's design, the Secretary of War is hereby authorized and directed to contract with the Pneumatic Gun Carriage and Power Company, of Washington, District of Columbia, without advertising, for said carriage, which shall be constructed on the general plan submitted by the company to the Board of Ordnance and Fortification in its letter dated February twenty-second, eighteen hundred and ninety-four, and shall be capable of being traversed and the gun elevated and depressed by either pneumatic, electric, or hand power, and the details of said plan may be modified, changed, or improved in the discretion of said company.

The same conditions relative to the platform, ammunition, and payments, and so forth, embodied in the contract for the Gordon ten-inch counterpoise carriage shall apply to the pneumatic carriage and the same facilities for carrying out the contract for the counterpoise carriage shall be extended to the pneumatic carriage. The sum of fifty thousand dollars, or so much thereof as may be necessary, is hereby appropriated for the purchase of the said pneumatic carriage: *Provided*, That the Secretary of War before making any payments under the said contract shall require the company to furnish satisfactory bonds to him to return the money if the carriage is not accepted.

The action of the Board with reference to this appropriation will appear in the proper place in this report under the head of "Experimental carriages."

2. By the provisions of the same act above referred to, approved August 1, 1894, appropriation was made for the continuance of the experimental and other work of the Board, as follows:

For the following, to be expended under the direct supervision of the Board of Ordnance and Fortification, created by the fortification appropriation act, approved September twenty-second, eighteen hundred and eighty-eight, and in the manner prescribed by said act, namely:

Board of Ordnance and Fortification: To enable the Board to make all needful and proper purchases, experiments, and tests to ascertain, with a view to their utilization by the Government, the most effective guns, small arms, cartridges, projectiles, fuses, explosives, torpedoes, armor plates, and other implements and engines of war, and to purchase or cause to be manufactured under authority of the Secretary of War, such guns, carriages, armor plates, and all other war material and articles as may, in the judgment of the Board, be necessary in the proper discharge of the duty devolved upon it by the act approved September twenty-second, eighteen hundred and eighty-eight, to pay the salary of the civilian member of the Board of Ordnance and Fortification provided by the act of February twenty-fourth, eighteen hundred and ninety-one, and for the necessary traveling expenses of said member when traveling on duty as contemplated in said act; for payment of the necessary expenses of the Board, including a per diem allowance to each officer detailed to serve thereon when employed on duty away from his permanent station, of two dollars and fifty cents a day; and for the test of experimental guns and carriages procured in accordance with the recommendations of the Board of Ordnance and Fortification, one hundred thousand dollars: *Provided*, That before any more money shall be expended in the construction or test of any gun, gun carriage, ammunition or implements, under the supervision of the said Board, the Board shall be satisfied, after due inquiry, that the Government of the United States has a lawful right to use the inventions involved in the construction of such gun, gun carriage, ammunition, or implements, or that the construction or test is made at the request of a person either having such lawful right or authorized to convey the same to the Government.

That all material purchased under the foregoing provisions of this act shall be of American manufacture, except in cases when, in the judgment of the Secretary of War, it is to the manifest interest of the United States to make purchases in limited quantities abroad, which material shall be admitted free of duty.

By the act approved February 24, 1891, the Board of Ordnance and Fortification is required in its annual report to "give a detailed statement of all contracts, allotments, and expenditures made by the Board."

A table is hereto appended, marked Appendix A, giving such detailed statement of allotments and expenditures from date of last report, October 31, 1893, to October 31, 1894.

As explained in former reports, no contracts are entered into directly by the Board, but they are made under the direction of the Secretary of War, by the chief of the proper Department.

The following tables exhibit the appropriations, heretofore made subject to the allotment of the Board, the allotments which had been made therefrom, and the balance unallotted to date of this report:

SUMMARY TO OCTOBER 31, 1893.

Appropriation.	Total appropriations.	Total allotments, expenditures, and reverting to Treasury.	Total balances on hand not allotted or expended.	Total allotments and expenditures from Oct. 31, 1892, to Oct. 31, 1893.
Fortification act Sept. 22, 1888.....	\$3, 972, 000. 00	\$3, 971, 753. 33	\$246. 67	\$19, 453. 29
Army appropriation Mar. 2, 1889.....	56, 000. 00	3, 156. 20 52, 843. 80	.....	.....
Fortification act Mar. 2, 1889.....	1, 233, 594. 00	1, 194, 819. 00	24, 775. 00	.....
Fortification act Aug. 18, 1890.....	3, 832, 935. 00	3, 808, 608. 50	38, 326. 50	142, 858. 30
Fortification act Feb. 24, 1891.....	2, 290, 803. 00	2, 290, 363. 54	439. 46	130, 042. 76
Fortification act July 23, 1892.....	210, 000. 00	187, 001. 24	22, 998. 76	185, 334. 58
Fortification act Feb. 18, 1893.....	125, 000. 00	74, 350. 00	50, 650. 00	74, 350. 00
Total	11, 720, 332. 00	11, 582, 895. 61	137, 436. 39	552, 038. 93

Total allotments.....	\$11, 511, 644. 37
Total expenditures for necessary expenses of Board.....	18, 407. 44
Total turned into Treasury.....	443. 80
Total reverting to Treasury by lapse of appropriation.....	52, 400. 00
Grand total	11, 582, 895. 61

The following statement shows a summary of appropriations, allotments, and expenditures during the year covered by this report, and the balances remaining on hand:

Appropriated prior to current year.....	\$11, 720, 332. 00
Appropriated by act of August 1, 1894, subject to allotment by the Board:	
For general objects.....	100, 000. 00
For pneumatic gun carriage.....	50, 000. 00
Total appropriated to date, subject to allotment.....	11, 870, 332. 00
Total allotted to date of last report.....	11, 511, 644. 37
Total allotted since last report	113, 870. 62
Aggregate to date.....	11, 625, 514. 99
Aggregate allotments to date brought forward.....	11, 625, 514. 99
Total expended to date for necessary expenses of Board.....	26, 556. 57
Total turned into Treasury.....	443. 80
Total reverting to Treasury by lapsed appropriations.....	52, 400. 00
Aggregate amount allotted, expended, lapsed, etc.....	11, 704, 915. 36
Balance unallotted at date of this report.....	* 165, 416. 64
Aggregate	11, 870, 332. 00

* NOTE.—Of this amount the sum of \$24,775 is available only for movable submarine torpedoes, for which it was exclusively appropriated; and the sum of \$4,500 is available only for the manufacture of 8, 10, and 12 inch seacoast guns by private parties; which renders it practically unavailable for allotment. The Board would respectfully recommend that these two balances amounting to \$29,275, be made available for the general purposes of the Board of Ordnance and Fortification.

GENERAL OPERATIONS.

The Board is by statute required each year to report "its general operations."

The general operations of the Board during the year covered by this report have consisted in supervising the progress and completion of the various experiments, tests, and works already allotted for; and also the prosecution of additional experimental work in guns, carriages, mounts, range finders, powders, explosives, aërial and subaquatic torpedoes, etc., and in testing these, and, in general, prosecuting the acquisition by purchase or manufacture, "with a view to their utilization by the Government," of the most effective implements and engines of war.

To this end all new inventions relating to these subjects, which have been brought to the attention of the Board, have received its careful examination and consideration, with a view to developing and adopting whatever might seem to be worthy and for the interest of the Government. The particulars of the more important operations will be discussed under separate heads.

STEEL FORGINGS AND ARMY GUN FACTORY.

The allotments made by the Board for the above purposes have been expended, and as all appropriations for these objects are now disbursed directly by the Chief of Ordnance, reference is made to the report of that officer for all further information relative thereto.

EXPERIMENTAL GUNS.

Advance has been made during the past year in the solution of the question of the availability of several types of experimental guns for the service as compared with the adopted type of the steel built-up breech-loading rifle.

The Woodbridge 10-inch wire-wound gun, which at the date of the last report of the Board was at the proving ground awaiting its test, has since been mounted and firings made therewith until on the twenty-third round it was found that the lining had been ruptured in several places, and the gun had failed. The table of firings will be found in the annual report of the Chief of Ordnance for the current year, to which reference is made.

The Crozier wire-wound 10-inch B. L. rifle.—This gun, which was nearly completed at date of last annual report, is now at the proving ground at Sandy Hook, and is mounted upon the Crozier-Buffington 10-inch disappearing carriage, and undergoing test. It has already been fired 80 rounds; has been used in the test of the Crozier-Buffington 10-inch disappearing carriage, and thus far no unfavorable symptoms have developed. The test will be continued during the year.

The 5-inch Brown segmental tube wire gun, of which a full account was given in the last annual report, and which had then been fired about 100 rounds, was tested to the one hundred and ninety-second round, when the gun failed, having become unserviceable.

This gun was tested with Leonard smokeless powder, and, as reported last year, withstood some very heavy pressures, ranging as high as 83,000 pounds to the inch. Since the disabling of the gun it has been removed from the proving ground by its owners (it being private property presented to the Government for test) to Reading, Pa., where it has been disassembled by removing the wire winding.

It was then found that one of the steel segments had been cut or broken in two at a point $34\frac{1}{2}$ inches from the face of the breech-block, and the wire winding torn asunder at that point, and the broken or torn ends turned up and partly fused. Before the gun can again be rendered serviceable it will need to be entirely disassembled and a new segment and liner put in, and the gun reconstructed. It will then be practically a new gun.

The Board regards the test of the gun, as presented to them, at an end. The balance of the allotments of \$6,411 made by the Board for its test, amounting to \$2,565.44, remains unexpended, and subject to reallocation.

In view of the foregoing facts, the Board has indefinitely postponed its former purpose of testing the system in a 10-inch gun of this type. The report of the test of this gun will be found in the annual report of the Chief of Ordnance for the current year, to which reference is made.

Haskell multicharge 8-inch gun.—This gun, which was approaching completion one year ago, has since been finished and delivered at the Sandy Hook proving ground, and is now awaiting the construction of a suitable carriage for its test.

The Chief of Ordnance has been authorized to contract for such a carriage, and the sum of \$8,600 has been allotted therefor by the Board.

Some difficulty was experienced in regard to the design for the test carriage and in entering into contract therefor. Plans for the test carriage have been prepared by the Ordnance Department, and it is expected that the test of the gun will be completed during the coming year. The total cost of this 8-inch gun to date has been \$56,913.36, aside from the carriage.

For full description of the gun and comparison in weight and cost with the service 8-inch, 10-inch, and 12-inch guns, reference is made to the last annual report, at page 10.

CONTRACT GUNS.

West Point Foundry contract.—This contract for eleven 8-inch B. L. rifles has been completed during the past year, and the guns have been delivered at the proving ground. The test of the type gun of this caliber has been fully completed, and the guns are ready for mounting as soon as suitable emplacements and carriages can be provided for them.

The hundred-gun contract.—This contract with the Bethlehem Iron Company calls for twenty-five 8-inch, fifty 10-inch, and twenty-five 12-inch guns. The progress of the contract is shown by the report of the contracting company under date of October 3, 1894, which is here inserted, as follows:

REPORT OF PROGRESS IN THE CONSTRUCTION AND EQUIPMENT OF THE GUN-FINISHING PLANT OF THE BETHLEHEM IRON COMPANY AND OF THE MANUFACTURE OF 100 FINISHED GUNS UNDER CONTRACT WITH THE CHIEF OF ORDNANCE, U. S. ARMY, OF NOVEMBER 7, 1891.

[Supplemental to report dated September 26, 1893.]

CONSTRUCTION AND EQUIPMENT OF FINISHING PLANT.

Machine shop.—During the past year this shop has been completed and put in regular operation.

Assembling plant.—This plant has also been completed and a considerable amount of assembling has been done in a satisfactory manner.

Machine tools.—All the machine tools referred to in the last report have been received, erected, and put into operation during the year and some other smaller tools added for work on breech mechanisms.

NOTE.—The completion of the first 8-inch guns has been seriously delayed by the development of inaccuracies in the boring and screw-cutting attachments of the new lathes which were especially procured for doing this work. The inaccuracies of the boring lathes have now been corrected and the finish boring of the guns is proceeding in a satisfactory manner. The makers are now correcting inaccuracies of screw-cutting lathes.

PRESENT CONDITION OF GUNS BEING MANUFACTURED UNDER CONTRACT.

25 GUNS, 8-INCH CALIBER.

Gun No. 1.—Assembled, finished turned and bored, not rifled, breech not threaded. Breech mechanism complete, except threading of block.

Gun No. 2.—Assembled and being turned. Breech mechanism same as No. 1.

Gun No. 3.—Assembled and being bored. Breech mechanism same as No. 1.

Gun No. 4.—Assembled. Breech mechanism same as No. 1.

Gun No. 5.—Same as No. 4.

Gun No. 6.—Assembled. Breech plate and block not complete.

Gun No. 7.—Jacket and C row of hoops assembled. All hoops ready for assembling. Breech mechanism same as No. 6.

Gun No. 8.—Same as No. 7.

Gun No. 9.—Same as No. 7.

Gun No. 10.—Same as No. 7.

Guns Nos. 11 to 20 inclusive.—Of the 90 steel forgings (exclusive of those of breech mechanisms) required for these guns, 65 are made and accepted on physical qualities, 5 jackets and 2 C1 hoops are finish-machined ready for assembling.

50 GUNS, 10-INCH CALIBER.

Of the 165 steel forgings (exclusive of those of breech mechanisms) required for the first 15 guns, all but 12 are made and accepted on physical qualities, and 1 tube, 3 jackets, and 41 hoops are finish-machined ready for assembling.

25 GUNS, 12-INCH CALIBER.

Of the 88 forgings required for the first 8 guns, 28 hoops are made and accepted on physical qualities.

THE BETHLEHEM IRON COMPANY,
ROBT. P. LINDERMAN,

President.

From this report it will appear that while unexpected delays have been experienced in the finishing of the first guns of the two smaller calibers, such progress has been made in the preparation of the plant and production of forgings that the contract is likely to be completed within the time limited. The Board is satisfied that the contract has effected the main object which Congress had in view in providing for it, which was the establishment of a private plant capable of finishing and assembling guns of as large a caliber as 12 inches.

SERVICE SEACOAST GUNS.

These guns—the 8-inch, 10-inch, and 12-inch B. L. rifles—continue to justify the high opinion heretofore expressed in regard to them.

The test of the 8-inch B. L. rifle may be regarded as fully completed, and that of the 10-inch B. L. rifle is well advanced. They have continued to be used at the proving ground in the test of powders and projectiles and in other experimental work throughout the year, and they are still in good serviceable condition.

The 12-inch B. L. rifle—the type gun—is mounted upon the gun-lift battery at Sandy Hook, and its test is progressing as occasion may require.

The Board has seen no reason to modify its encomium of these splendid arms, as expressed in its last annual report.

The total number of service seacoast guns which will probably be completed at the end of this calendar year is as follows:

Where finished and assembled.	8-inch.	10-inch.	12-inch.
At gun factory, Watervliet	36	34	15
At West Point foundry	11	.....	.....
Under contract at Bethlehem, Pa.....	1	.....	.....
Total.....	48	34	15

With so considerable a number of heavy guns completed, the armament of our coasts might proceed very rapidly if adequate appropriations were made for the carriages and emplacements.

12-INCH SEACOAST MORTARS.

Cast-iron steel-hooped mortars.—The contract for 43 of these mortars, which was entered into with the South Boston Iron Works, has been completed during the year. All these have been delivered at the proving ground, and one battery of 16 mortars, in four groups, has been placed in position to command the southern entrance of New York Harbor. Like emplacements are in readiness at the eastern entrance of New York Harbor, at Boston, and at San Francisco. The entire 73 of this type of mortar can be put in position at any time when, through adequate appropriations, the remaining emplacements for them shall have been completed.

The Board during the year made an allotment of \$2,000, in addition to a like amount of \$1,200 reported a year ago, for the purpose of setting up the 16-mortar battery at Sandy Hook above referred to.

ALL-STEEL 12-INCH MORTARS.

No additional mortars of this type have been put under fabrication during the year. The type mortar was developed and tested under the allotment of the Board. (Report, 1892, p. 21.) But since the act of 1892 appropriations for this object are not subject to such allotment.

Tests made during this year with the 12-inch mortars—both the cast-iron steel-hooped and the all-steel mortar—for range and accuracy resulted most satisfactorily; and the result as to accuracy was such as to greatly enhance the estimate of the value of this weapon.

These arms can be constructed with comparative rapidity and at a cost much less than modern high-power guns. Carriages adapted to their service have also been successfully developed. Attention is invited to the last annual report, at page 13, for a more detailed statement as to the range, power, and required number of these mortars.

GUN CARRIAGES AND MOUNTS.

Twelve-inch gun lift.—The 12-inch gun-lift battery at Sandy Hook is complete, except the carriage for the second gun, which the Board is advised is nearing completion and should soon be in place.

The first gun and carriage have been transferred to the south lift, and the test of that lift has proved satisfactory. In a short time this battery will be in service condition.

Emery 12-inch elevating carriage.—The inventor of this carriage, Mr. A. H. Emery, of Stamford, Conn., advises the Board under date of October 18, 1894, as follows:

The design is now nearly complete and the working drawings rapidly approaching completion, ready to commence work in the shop. In justice to myself and the work so far done, I must say that the design is very satisfactory, and the long time necessarily spent over the drawings will in the end give us a much better carriage than we could otherwise possibly get, and in much less time than we should have consumed if we had pushed the work in the shop and found the troubles in the work by use, after construction, as is so often done.

Twelve-inch minimum-port casemate carriage.—Since the date of the last report this carriage has been received from the Grusonwerk Company of Magdeburg-Buckau, Germany, and set up at the Sandy Hook proving ground.

The carriage is of the front pintle form, and the distinctive feature about it is the method of giving elevation to the gun. This is not accomplished by revolving the gun on its trunnions, but by raising or depressing the top carriage and chassis together with the gun bodily about a horizontal axis in the carriage as near to the middle of the rear face of the embrasure as possible. This is done by hydraulic power. The advantage of the carriage is that the embrasures may be made smaller for the same field of fire than in the case of the ordinary type of casemate carriage.

The test of the minimum-port carriage was commenced March 8, 1894, but at the sixth round the front transom, a massive iron casting, broke, rendering the carriage unserviceable. A new transom is being made of cast steel, and the test will be continued when the necessary repairs are made.

Ten-inch pneumatic carriage.—The original carriage of this type still remains at the proving ground, and no further firings have been made from it during the year, except a single round fired before the Board on Disappearing Carriages, October 16, 1894.

The final disposition to be made of this carriage has not been determined. Other 10-inch disappearing carriages have since been developed so much superior to this, in the opinion of the board, that it is not probable that it will be placed in a position where it will be required for actual service.

A drill or practice carriage ought to be of the same general type as the carriage adopted for service.

For particulars of construction, cost, and test of this carriage, see annual report for 1892, p. 12.

The modified (or new) 10-inch pneumatic carriage.—As stated in the former part of this report, the Secretary of War is authorized and directed to contract with the Pneumatic Gun Carriage and Power Company, of Washington, D. C., for a 10-inch pneumatic disappearing carriage, "which shall be constructed on the general plan submitted by the company to the Board of Ordnance and Fortification in its letter dated February 22, 1894."

The letter of February 22, 1894, referred to in the act, was as follows:

WASHINGTON, D. C., February 22, 1894.

SIR: Having been informed that the Committee on Military Affairs of the Senate has referred to you for recommendation Senate bill No. 1617 entitled "A bill authorizing the Secretary of War to purchase a 10-inch disappearing gun carriage from the Pneumatic Gun Carriage and Power Company," I respectfully submit herewith for your consideration plans and specifications of the same and respectfully request that they will, together with this communication, be returned to the committee with your reply. By this plan you will perceive we have very materially modified and improved our late carriage, removing, as we believe, all objections to it, and

giving the Government a carriage which can be maneuvered by hand power, electrical power, or pneumatic power, at the option of the Department. Your Board of Ordnance and Fortification in its last annual report, which is now before Congress, states that the Gordon "modified form of nonrecoil counterpoise 10-inch carriage" * * * has so favorably impressed the Board that it has recommended that the Secretary of War contract for the construction of one of the modified carriages, and the sum of \$47,700 has been allotted therefor, and the Secretary of War has approved the recommendations, and the Chief of Ordnance has entered into the contract for said carriage." (See p. 18 *et seq.*, Annual Report Board of Ordnance and Fortification for 1893.)

As we have been competing with the Gordon carriage and have spent a great deal of time and money in developing our carriage, we believe we are entitled to the same consideration that the Department has extended to its own officer, Capt. Gordon, in giving him a new contract for a modified and improved carriage. We think also that as our first design of a disappearing carriage was that of a center pintle, which design was changed at the suggestion of the Board of Ordnance and Fortification to a front-pintle carriage, that we now should be permitted to build a center-pintle carriage which will remove some of the disadvantages of traversing which was caused by the change of the design. We respectfully submit the following statement of what we propose to do and guarantee, viz:

Capt. Gordon proposes in his contract to elevate the gun from 5° depression to 20° elevation by hand in 50 seconds. We offer to do the same by hand within 45 seconds, and by pneumatic power furnished by the Whitehead air flask in 15 seconds and by electric power in 1 minute. Capt. Gordon's contract is to traverse his carriage by hand 360° within 5 minutes. We offer to do the same by hand within 4 minutes, and by pneumatic power furnished by a Whitehead air flask in 2 minutes, and do the same with electric power in the same length of time. The contract for Capt. Gordon's carriage states that the gun shall be elevated from the loading position to the firing position within 5 minutes. We propose to do the same by pneumatic power in 30 seconds. The Gordon carriage contract is to elevate the gun from loading position to firing position and return to loading position within 3 minutes. (Presumably without firing.)

We propose to do the same thing in the same length of time, to wit, three minutes. We accomplish this after lifting the gun by exhausting the air and refilling the cylinder rapidly by use of an air flask.

We will guarantee the gun will return to the carriage with all kinds of charges down to 125 pounds.

The plan does not show our pneumatic rammer. We propose, however, to put one on the carriage similar to the one on our carriage at Sandy Hook and operate it by use of an air flask. The ramming can also be done by hand. We claim to save considerable time in the use of this rammer (pneumatic) and the use of our new designs for a hand hoist, which we claim to be an improvement over the Gordon carriage hoist, in that it can be used at any time during the operations of the carriage. We guarantee, also, that the weight of our carriage shall not exceed 60 tons, and the probability is it will be about the same weight of the present carriage. We claim this to be a very great advantage over the modified Gordon carriage, which we are informed will weigh in the neighborhood of 200 tons. We will perform all the hand-gear operations with the same number of men (to wit, 15) that the Gordon contract requires for his carriage. The plan submitted herewith shows hand gears for traversing and for elevating and depressing, which we have determined to change to others that will work more rapidly; but as your Board is now in session we have not time to show the new method by drawing. But we guarantee their performance as herein stated and ask that our mechanical engineer be permitted to appear before your Board and orally explain the changes he proposes to make. They are simple and involve no untried methods. Our consulting engineer, Capt. John A. Howell, and our mechanical engineer, Mr. Henry A. Spiller, are now in this city and ready to answer any questions or make any explanations that your Board may ask or desire.

We propose to fire 12 rounds within 1 hour with the same premiums and same penalties that your Department has put in the Gordon carriage contract, to wit: For each round over and above the 12 fired we are to receive a premium of \$2,000 and for each round less than the 12 in 1 hour we are to suffer a penalty of \$1,000. You will perceive we guarantee to fire 2 rounds more per hour than the Gordon contract calls for, and we believe we can do better than we guarantee. We will build this carriage at the ordnance works belonging to the firm of William Cramn & Sons, in Philadelphia, and will agree to deliver the same complete and ready for test in seven months from date of contract. We will give the same bonds that the Department has required of Capt. Gordon or his manufacturer and agree to payments to be made in the same manner. Our price for this carriage, complete set up, ready for mounting at Sandy Hook, will be \$50,000, which will include 5 air flasks,

which are described in the data appended herewith, which has been prepared by Capt. John A. Howell, U. S. Navy, the inventor of the Howell torpedo.

While the bill provides for \$70,000, the additional \$20,000 has been inserted in order that the Board of Ordnance and Fortification may have the funds to build the foundations, purchase ammunition, and pay for incidental expenses. We are willing to have the bill amended so as to put the whole appropriation under control of your Board of Ordnance and Fortification.

Very respectfully,

C. E. CREECY,

President Pneumatic Gun Carriage and Power Company.

Hon. DANIEL S. LAMONT,
Secretary of War.

The following specifications accompanied the above letter:

SPECIFICATIONS FOR 10-INCH PNEUMATIC CENTRAL-PIVOT DEPRESSING GUN CARRIAGE, CAPABLE OF BEING MANEUVERED BY HAND, PNEUMATIC, AND ELECTRIC POWER.

The price agreed upon for the carriage shall include all expenses incident to the building of the carriage and setting up the same at the proving ground.

This carriage shall be completed and ready for test at the proving ground within seven months from the date of the contract.

In the construction of this carriage the following conditions shall be fulfilled, viz:

1. The carriage shall be adapted for a 10-inch B. L. rifle of about 32 calibers length of bore, firing a full charge of 250 pounds of powder, or a sufficient charge, with a projectile weighing 575 pounds, to give a velocity of not less than 1,975 feet per second.

2. The carriage shall permit of motion for firing through a horizontal angle of 360°, shall admit of loading at any point of the traverse, and shall traverse 360° within 4 minutes by hand.

3. When in a loading position at right angles to the parapet no part of the gun or carriage shall extend above a plane passed through the interior crest and sloping to the rear at an angle of 7° with the horizon.

The interior crest, as herein mentioned, will be understood to be represented by a horizontal line about 146 inches above the plane of the lower surface of the circular racer bed of gun carriage, and the plane (vertical) of the breast-height wall will be considered as parallel to the lower gun lever center about 138 inches in rear of this horizontal line.

4. The gun when in position for firing shall permit of a depression of 5° and an elevation of 20°, and shall be capable of elevating from 5° depression to 20° elevation in 50 seconds.

The muzzle shall project not less than 5 feet beyond the breast-height wall.

5. When in position for loading the axis of the gun shall not make with the horizontal an angle greater than 5°, and in this position it shall be practicable to regulate accurately the elevation that may be desired for firing.

6. For all charges between a minimum of 125 pounds of powder giving not less than 1,560 feet velocity to be adopted for the gun, or such weight of other powder as will give the same velocity and the maximum charge indicated in paragraph No. 1, and for all elevation used the gun shall always return to the same position of recoil for loading.

7. The construction shall be such that the piece may be raised to firing position within 30 seconds, its recoil controlled by compressed-air power, the shot raised by counterweight, power taken from recoil cylinder to lift counterweight, and shot tray lowered to loading place by gravity.

8. With this carriage shall be furnished all the necessary metal parts, including circular racer bed and holding-down bolts; also such parts as may be necessary to adapt the gun to carriage.

The party supplying carriage shall furnish a man to superintend and inspect the erection of this carriage and preliminary tests, and the Government to supply all helps necessary to erect and test said carriage, including all ammunition necessary for the preliminary and official test.

All necessary blue prints of carriage and foundation to be supplied with this carriage.

9. The weight of this carriage should be as light as practicable, consistent with the development of the principle involved and the requisite strength of the system, not to exceed 60 tons.

10. The principal parts of the carriage to be made of the following materials, viz:

The main gun levers, main side checks, lower circular racer bed, elevating band, clips, loader arm, and elevating arms to be of cast steel.

The recoil cylinder, chambers, piston rod, cylinder heads, and gears of gun iron. The cross head, centering pins, and fulcrum of forged steel.

All bolts and pins to be made of the best Norway iron.

All steel castings and steel forgings to have a tensile strength of not less than 50,000 pounds per square inch with an elongation of about 20 per cent in 2 inches.

All gun iron casting to have a tensile strength of not less than 25,000 pounds per square inch.

All composition casting to be of the best bearing metal, and to have a tensile strength of about 25,000 pounds per square inch, with an elongation of 10 per cent in 2 inches.

11. A standard 10-inch B. L. rifle, similar to the one to be fired on the carriage, shall be delivered at works of the contractor, as provided in contract for Gordon carriage, to insure complete adjustment of the gun to carriage.

12. The contractor to have the use of blocks and tackle at the proving ground and the use of machine tools in machine shops there, if desired, for erecting the carriage previous to the tests and for changes found necessary before and during the preliminary tests.

13. The parties furnishing the carriage and appurtenances shall be solely responsible for such plans as they may adopt and use in the construction. The work shall at all stages be open to official inspection, and the contractor for the work shall at all times furnish full facilities for the inspection of the work by the Government. They shall also furnish any assistance that may be required in determining the quality of materials, and generally, such information, including drawings, in regard thereto and the manner of using the same as may be required.

The materials and workmanship shall be of the best quality and finish where required.

The test of the materials intended for use in the carriage and its appurtenances, from specimens prepared by contractor, shall be at the expense of the Government.

The specimens for test of the principal members shall be taken directly from parts themselves, or from a test block poured at the same time as the casting.

14. By the use of pneumatic power for handling the carriage it can traverse 360° in 2 minutes and the gun depressed from 20° to 5° depression in 1 minute.

15. If the carriage successfully performs the stated test it shall be accepted.

16. The expense of the above-indicated test and the ammunition for such experimental firing as may be deemed necessary before the carriage is turned over for official test shall be borne by the United States.

17. In the manufacture of this carriage payments will be made by the United States on the regular certificate of inspection and receipt used by the Ordnance Department, in six equal installments, as follows:

(1) When all patterns are made; (2) when steel forgings are made; (3) when composition and gun iron castings are made; (4) when steel castings are made; (5) when steel and gun iron are machined; (6) when carriage has been accepted. Ten per cent to be reserved from each partial payment until carriage has been accepted by the United States.

The action of the Board upon the above letter was as follows:

[Extract from the proceedings of the Board of Ordnance and Fortification.]

WAR DEPARTMENT,
Washington, D. C., February 25, 1894.

* * * * *

The Board resumed consideration of Senate bill No. 1617, introduced in the Senate February 13, 1894, and referred to the Secretary of War February 14, 1894, by the Senate Committee on Military Affairs, and by him to the Board, and in connection therewith designs, submitted February 23, 1894, of a disappearing carriage for mounting a 10-inch B. L. rifle, by the Pneumatic Gun Carriage and Power Company.

Mr. C. E. Creecy, president of the company, came before the board and explained the designs, a record of which hearing was made by the stenographer of the Board.

After mature deliberation of the bill and the designs and propositions submitted, the board has the honor to return the bill to the honorable Secretary of War, together with the letter of the Pneumatic Gun Carriage and Power Company, of February 22, 1894, with accompanying designs, above referred to, with the information that a 10-inch disappearing carriage was purchased from the Pneumatic Gun Carriage and Power Company in 1892 from an allotment made by this Board. This carriage was tested by the Ordnance Department in the presence of members of the Board at the Sandy Hook proving ground, and full reports of such tests were fur-

nished the Board, which reports are found in its annual report for 1892, pp. 44 to 61, and are discussed on pp. 12 to 15 of the said report of the Board.

With respect to the modified form of the pneumatic carriage, in the opinion of the Board the question is resolved into a comparison of two widely different systems of supplying power for the operation of the carriage. The proposed pneumatic carriage is to be operated by, and will be wholly dependent upon, highly compressed air, confined in flasks, which in actual service must be kept in store, to be charged as occasion may require during battle; and an accident to which from the enemy's fire or other cause would put the gun out of action.

The two gravity-return or counterpoise carriages already constructed and tested—the Gordon and the Crozier-Buffington—are operated by gravity. There are no flasks to be filled or stored, no risk of explosion, and no delay or difficulty in refilling.

Supposing the question of time of manœvering to be wholly eliminated by the proposition now submitted, the Board is nevertheless of opinion that gravity is a more certain, reliable, constant, and safe source of power for operating a disappearing carriage than so subtle, uncertain, and in some respects dangerous an element as highly compressed air.

Aside from this consideration, the counterpoise carriages are simpler and stronger in structure and consequently less liable to become disordered or disabled in action, when such disability would be disastrous.

When the first disappearing pneumatic carriage was allotted for, no other design had been successfully developed in this country, and the hydro-pneumatic Elswick carriage, which this largely resembles, was the most successful abroad.

The two counterpoise carriages since tested are purely American inventions, and their designers have given to the United States the right to manufacture, without royalty, while the pneumatic carriage is a device whose details are patented, and the carriage could only be manufactured by the payment of royalties.

For the reasons as above expressed the Board does not recommend the purchase or test of the proposed modified pneumatic carriage.

* * * * *

On the 30th of March, 1894, the Senate Subcommittee on the Fortification Appropriation Bill, referred, for an expression of the Board's views, a copy of Senator Teller's proposed amendment (which was the act as finally passed), providing for the manufacture of the second pneumatic disappearing gun carriage. At the date of the receipt of this communication the Board was not in session, and the letter in reply thereto, which was approved by the Board, was prepared by the senior member present. Gen. H. L. Abbot, as follows:

BOARD OF ORDNANCE AND FORTIFICATION,
Washington, D. C., April 2, 1894.

SIR: I have the honor to acknowledge for the Board of Ordnance and Fortification the receipt of the amendment intended to be proposed to the bill H. R. 4858, appropriating \$50,000 for the manufacture and test of a 10-inch pneumatic disappearing carriage, forwarded to the Board with your request for its views relative thereto.

There is inclosed herewith the action of this Board (see above) upon the letter of February 22, 1894, therein referred to, declining to recommend this carriage.

If Congress should see fit to make an appropriation for this purpose it would seem wise, in the opinion of the Board, to protect the interests of the Government by the insertion of a clause that the premium of \$2,000 per round for rapidity of action be only paid, provided the carriage exceed in this respect the best results which may have been obtained in any other 10-inch disappearing carriage tested by the Government, prior to the test of said pneumatic carriage, and then only for such number of rounds as may be fired in an hour in excess of the number fired with such other carriage.

There can be no object in paying a premium for the production of a carriage, objectionable on the ground of employing pneumatic power, without it excel in rapidity of action hand-power carriages much simpler in construction.

For the board.

Very respectfully,

HENRY L. ABBOT,

Colonel of Engineers, U. S. Army, Bvt. Brig. Gen., Senior Member Present.

Senator W. CALL,

Chairman Subcommittee on Appropriations.

As the 8-inch Crozier-Buffington carriage has already given 10 rounds in 12 minutes 21 seconds, and the 10-inch Crozier-Buffington has yielded 10 rounds in 14 minutes 22 seconds, and the new Gordon 10-

inch carriage showed a capacity in its first fire of a round in a minute, the propriety of the suggestion in regard to bounties is apparent.

Subsequent to the passage of the act of August 1, 1894, there were referred to the Board, through the Secretary of War, three letters of the Pneumatic Gun Carriage and Power Company relative to a contract for a modified carriage, according to the letter of February 22, 1894. The action of the Board thereon will appear from the following extract from its proceedings of August 22, 1894:

ARMY BUILDING,
New York City, August 22, 1894.

The letters of the Pneumatic Gun Carriage and Power Company, dated August 6, 8, and 16, 1894, with their indorsements, were then laid before the Board, together with a copy of the company's letter of February 22, 1894, and the act of Congress approved August 1, 1894, making appropriations for fortifications, etc.

In these letters the company request that a contract be entered into with them to furnish the United States with one of their 10-inch pneumatic disappearing gun carriages, in accordance with their letter of February 22, 1894, to the Secretary of War; and they further claim that they are entitled to similar premiums for rapidity of firing as were embodied in the contract for the Gordon carriage.

The language of the appropriation bill is as follows:

"To enable the Board of Ordnance and Fortification to procure and test one ten-inch pneumatic disappearing gun carriage of the Pneumatic Gun Carriage and Power Company's design, the Secretary of War is hereby authorized and directed to contract with the Pneumatic Gun Carriage and Power Company, of Washington, District of Columbia, without advertising, for said carriage, which shall be constructed on the general plan submitted by the company to the Board of Ordnance and Fortification in its letter dated February twenty-second, eighteen hundred and ninety-four, and shall be capable of being traversed and the gun elevated and depressed by either pneumatic, electric, or hand power, and the details of said plan may be modified, changed, and improved in the discretion of said company.

"The same conditions relative to the platform, ammunition, and payments, and so forth, embodied in the contract for the Gordon ten-inch counterpoise carriage shall apply to the pneumatic carriage, and the same facilities for carrying out the contract for the counterpoise carriage shall be extended to the pneumatic carriage. The sum of fifty thousand dollars, or so much thereof as may be necessary, is hereby appropriated for the purchase of the said pneumatic carriage: *Provided*, That the Secretary of War, before making any payments under the said contract, shall require the company to furnish satisfactory bonds to him to return the money if the carriage is not accepted."

The Board finds, on considering the terms of the act, that certain points involving the payment of large premiums and possibly the rejection of the carriage for non-fulfillment of certain conditions, demand legal interpretation before a form of contract can be properly drawn.

The act provides that the carriage under construction "shall be constructed on the general plan submitted by the company to the Board of Ordnance and Fortification in its letter dated February 22, 1894;" also that "the same conditions relative to the platform, ammunition, and payments, and so forth, embodied in the contract for the Gordon 10-inch counterpoise carriage, shall apply to the pneumatic carriage."

The proposal of the company in its letter referred to in the act differs from the requirements of the Gordon contract in the following particulars:

REQUIRED BY GORDON CONTRACT

PROPOSAL OF PNEUMATIC GUN CARRIAGE AND POWER COMPANY.

Elevate from -5° to $+20^{\circ}$.

By hand power, 50 seconds.

By hand power, 45 seconds.
By electrical power, 1 minute.
By pneumatic power, 15 seconds.

Traverse through 360° .

By hand power, 5 minutes.
By electrical power, 2 minutes.

By hand power, 4 minutes.
By electrical power, 2 minutes.
By pneumatic power, 2 minutes.

Elevate from loading to firing position.

By hand power, 5 minutes.

By hand power (not given).

By pneumatic power, 30 seconds.

Raise to firing position and return to loading position.

By electrical power, 3 minutes.

By pneumatic power, 3 minutes.

Rounds per hour.

By hand power.

"The carriage should be such as to permit of the firing of the service 10-inch rifle therefrom 10 times in 1 hour, using hand power only, and there shall be a deduction of \$1,000 from the contract price agreed upon for each round less than this number in said time and a bonus of \$2,000 for each round greater than this number."

Power not mentioned.

"We propose to fire 12 rounds within 1 hour with the same premiums and same penalties that your Department has put in the Gordon carriage contract, to wit: For each round over and above the 12 fired we are to receive a premium of \$2,000, and for each round less than the 12 in 1 hour we are to suffer a penalty of \$1,000. You will perceive that we guarantee to fire 2 rounds more than the Gordon contract calls for, and we believe we can do better than we guarantee."

As bearing upon this subject of 10-inch disappearing carriages the Board has the honor to state that on the 21st instant it witnessed the rapidity test of the Crozier-Buffington counterpoise 10-inch disappearing carriage, at the proving ground at Sandy Hook, at which time ten service rounds were fired from said carriage in 22 minutes and 19.9 seconds, including an unusual delay of 7 minutes and 38 seconds, due to the sticking of the breech-block of the gun, between the fifth and sixth rounds, without the slightest mishap to the carriage, which was operated entirely by hand power. From this it will be observed that the question of the number of rounds per hour to entitle the pneumatic carriage to the premium of \$2,000 per round becomes of special importance. In the case of the Crozier-Buffington carriage no premiums were offered in the contract.

The Board recommends that the legal questions arising from these differences between the proposal of the company and the Gordon contract be referred to the proper legal authority and a decision obtained before the contract be drawn.

The Board further invites attention to the fact that the Gordon contract requires that "the work must pass the required inspection at all stages of its progress and be approved by the officers of the Ordnance Department before being accepted and paid for by the United States." In view of the premiums and forfeitures depending upon the time of delivery of the carriage this specification is regarded as highly important.

Since the foregoing action, the Board has received no further communication on the subject, and taken no further action except to make the formal allotment of the \$50,000 appropriated for the purchase of the carriage, so that the contract may be entered into at any time.

*The Gordon 10-inch disappearing carriage (original).—*This carriage, which was fully described in the last annual report, and for which the Board allotted \$60,975, has been disassembled and stored at the proving ground at Sandy Hook. It was necessary to remove it from the battery line to make room for the test of other types of disappearing carriages. No steps have been taken for its final disposition.

*The Gordon modified 10-inch disappearing carriage.—*This carriage is a modification of the 10-inch carriage designed by Capt. W. B. Gordon, Ordnance Department, and was quite fully described in the report of the Board for last year. The main modifications which were approved by the Board, and which have been made in the construction of the carriage, were outlined in that report as follows:

(1) The weight of the carriage and counterpoise is very considerably reduced and the masses much more compactly disposed.

(2) The thrust of the recoil, instead of being transmitted to the hydraulic cylinders by the connecting rods and trucks, is communicated by a combination of gears, producing a direct action upon the pistons instead of the oblique thrust of the old mechanism, and the "dead center" is wholly obviated.

(3) The air chamber, or reservoir, instead of being disposed above and across the hydraulic cylinders is placed parallel with them.

In addition, the modified carriage has lever valves of easy manipulation to control all the operations required in maneuvering; cranks and gearing for traversing; electrical appliances for all movements except elevating and depressing, and the main cylinder has been altered so that it can be used to run the gun up and down by hydraulic pressure furnished by a hand pump.

The test of the carriage was commenced May 26, 1894. At the first round the bolts holding the cap of the elevating screw were broken, and at the second, May 28, the casting holding the elevating screw to the horizontal shaft gave way. The front platform upon which the pumps rested was also injured by the blast. The platform carrying the pumps was changed to the rear of the carriage after this round. At round 6 one of the large bolts holding the hydraulic pivot to the carriage was found to be broken and all the others bent. These were replaced, and a counterweight weighing 8 tons was bolted on the front of the carriage, and two cast-iron heels were attached to the rear to take up the strain of recoil.

This alteration was not, however, sufficient to produce stability, and two of the twelve bolts holding the hydraulic pintle to the housing broke off at the fourteenth round.

A supporting arc was then bolted to the bottom of the carriage, in front, partly encircling the pintle cylinder, which has thus far proved effective.

September 27, 1894, the Board witnessed the firing of 10 proof rounds for testing the general working of the carriage. These rounds were fired in accordance with the following programme, arranged by the Board:

Number of rounds.	Angle of elevation or depression.	Powder charge.
	°	Pounds.
1.....	About —5,	224
2.....	+5	224
2.....	+10	150
		224
2.....	+15	150
		224
2.....	+20	150
		224
1.....	+10	224

The powder used for the 224-pound charge was Du Pont's V U, lot 17, and gave the required service pressure of 35,000 pounds per square inch. The carriage worked smoothly throughout the firing of the ten rounds.

The Board then witnessed the prescribed maneuvering tests, using hand power only, as follows:

The gun was elevated from -5° to $+20^{\circ}$ in 38 seconds, the time allowed being 50 seconds. The carriage was traversed through 360 degrees in 2 minutes 56½ seconds, the time allowed being 5 minutes. Four men worked the cranks, being relieved by others at intervals.

The gun was raised from the loading to the firing position in 1 minute and 5 seconds, the time allowed being 5 minutes, 13 men working

the pumps without relief. Thereupon the Board found that the carriage had passed the official tests prescribed by the contract, and recommended its acceptance by the Government.

At the first round of the rapidity test, to determine the amount of forfeiture or bonus, the valve pocket at the rear end of the main cylinder gave way, disabling the carriage. One of the employes of the Morgan Engineering Company admitted that he had neglected to fasten the valve open by means of a set screw after the hand maneuvering tests. This valve closed, thus cutting off the means of escape for the fluid in the cylinder, and the unyielding pressure of the column of liquid, transmitting the force of recoil, came upon the valve. It is interesting to note that this round was fired in exactly one minute from the time the signal was given, until the recoil of the gun, which burst the valve pocket.

Since this test the carriage has been fired three times before the Board on Disappearing Gun Carriages, and at the third round one of the elbows at the rear of the hydraulic cylinder cracked.

This carriage is of a very original design, and it was inevitable that its development should be accomplished only after surmounting many unforeseen difficulties. The carriage worked admirably in the trial before the Board until the accident at the beginning of the rapidity test, and the Board has faith in the ultimate success of this system for positions requiring unusual cover and all-around fire.

The tests already show that the carriage is capable of great rapidity of fire.*

The 8-inch Crozier-Buffington disappearing carriage.—The 8-inch carriage of this type had been received at the proving ground prior to the last annual report, and was being assembled and mounted at that date.

Since then it has passed a most satisfactory test at the hands of the Ordnance Board, exceeding for rapidity and smoothness of operation the most sanguine expectations of this Board. This is an absolutely new type of disappearing carriage, the result of the combined inventions of Col. Buffington, U. S. Ordnance Department, and Capt. Crozier, Ordnance Department. It is a strictly American invention. Although of an entirely novel type, never before subjected to trial, it passed successfully through its test without so much as the breakage of a bolt, or any accident whatever. Only slight alterations in the recoil mechanism were required. The Board regards this as a remarkable record. This is a front-pintle carriage, and traverses through 180 degrees.

The following operations were performed, by hand power, in the times denoted:

Operation.	Time.	
	Min-utes.	Sec-onds.
Traverse through an arc of 54°.....	1	13½
Elevated from -5° to +14° (4 men)		13½
Depressed from +14° to -5° (4 men)		20
Lowered from firing position to loading position.....	12	29
Traversing (gun down) 54°	1	14½
Elevating from -5° to +14° (gun down, 2 men).....		8½
Depressing from +14° to -5° (2 men)		18
Time of loading		68
Time of raising from loading to firing position.....		4
Time of firing 10 rounds (rapidity test).....	12	21

This carriage has been accepted, and, so far as relates to 8-inch disappearing carriages for elevated sites, there is no reason known to the

* Since the date of this report this carriage has been successfully tested for rapidity (Dec. 3, 1894), giving the remarkable record of 33 rounds in one hour.

Board why manufacture for service might not proceed at once and rapidly, except the want of appropriations.

The Board recommends that liberal appropriations be made, so that the expenditures for guns of this caliber and emplacements therefor, already made, may be speedily utilized.

Ten-inch Crozier-Buffington disappearing carriage.—This carriage, which was in process of fabrication at date of last report, has been completed, assembled on its platform at Sandy Hook, and fully tested and accepted during the year.

The carriage does not materially differ, except in proportions, from the 8-inch carriage. Only slight modifications were required, especially in the hydraulic cylinders for checking recoil, in order to make it work satisfactorily. Like the 8-inch carriage of this type, the test has been completed without accident and to the entire satisfaction of the Board.

On August 21, 1894, the Board witnessed the official rapidity test of this carriage. No premium or other special pecuniary benefit was dependent upon the test, but the ten rounds were fired in 14 minutes and 22 seconds. The charges were 240 pounds DuPont's brown prismatic powder and a 575-pound solid shot. The gun was fired at a uniform elevation of 10° , and the projectiles were lifted from the platform, in loading, by means of an ordinary shot crane, without any special mechanism. The gun and carriage were operated by a detail of 1 noncommissioned officer and 11 men, under charge of an officer.

For the official reports of the tests of these two carriages reference is made to the report of the Chief of Ordnance for the current year.

So far as known to the Board this is the best record yet made by any 10-inch disappearing carriage.

Adams 10-inch disappearing carriage.—Among the new designs for disappearing carriages which have come before the Board during the year is that of Maj. M. B. Adams, U. S. Corps of Engineers.

The design not being fully developed, and the drawings incomplete, the Board considered the project of sufficient merit to warrant the allotment of \$300 to cover the expense of the preparation of detailed working drawings. The matter remains *in statu quo*. The working drawings have not as yet been completed.

SEACOAST MORTAR CARRIAGES.

The spring return 12-inch mortar carriage.—The type carriage of this design has remained in use at the proving ground, and has continued to give satisfaction as a service carriage. The manufacture of carriages of this type has progressed satisfactorily during the year; all have been delivered at the proving ground at Sandy Hook, and 42 have been forwarded to the sites where they are to be placed in position.

The substitution of spiral springs for the Bellville springs, originally used for taking up the recoil, has been definitely adopted, with satisfactory results.

The Gordon 12-inch mortar carriage.—This mortar carriage, for which the board made an allotment of \$6,500 July 12, 1893, has been completed during the year, and is now at Sandy Hook awaiting its test.

The board has made additional allotments for this carriage, as follows:

For completion of carriage	\$385
For setting up and test	450
	<hr/>
Total	835
Original allotment	6, 500
	<hr/>
Total	7, 335

The test will take place very soon.

The design is not patented in the United States, and is an American device.

In the Gordon carriage the piece recoils along inclined slides, to which it is clipped, at an angle of 60° , and the recoil is taken up and the mortar returned to battery by a combination of hydropneumatic cylinders and spiral springs.

Such carriages can be rapidly and cheaply produced, not only at the Government carriage factory, but also by private plants, in case of necessity.

PLATFORMS.

The board has allotted the sum of \$2,318.92 during the year for experimental platform plates for testing the 8-inch and 12-inch barbette carriages, and \$1,000 for platforms for testing the 6-pounder rapid-fire guns. It also has made an allotment of \$1,200 for platform for testing the 12-inch mortar carriage presented for test by the Pneumatic Gun Carriage and Power Company.

AUXILIARY DEFENSES.

MINES AND TORPEDOES.

Ericsson aerial subaquatic projectiles.—The two remaining projectiles purchased from the Ericsson Coast Defense Company, referred to in the last report as being on hand at Fort Wadsworth, were fired before a committee of the Board July 20, 1894.

The report of the committee is as follows:

NEW YORK, N. Y., July 21, 1894.

GENERAL: The committee of the Board appointed to observe the firing of the two remaining Ericsson aerial subaquatic projectiles have the honor to submit the following report:

The experiments took place at Fort Wadsworth, New York Harbor, July 20, 1894.

Upon arriving at the place the committee found that a projectile had already been loaded into the gun by Mr. Bushnell, secretary of the Ericsson Coast Defense Company. Mr. Bushnell had been at work for three days with two men furnished by the company and one man furnished by the Board putting the projectiles in order, regulating the steering gear, painting them, etc. The gun was the old 15-inch Ericsson Destroyer gun, lengthened.

First shot.—The propelling charge was 10 pounds spherohexagonal powder and the elevation was 9° . The projectile made a flight in the air of 282 yards and entered the water at an angle of $29^{\circ} 50'$. It rose from the water point first 93 yards from the point at which it entered, and floated. The projectile was recovered without difficulty by a detachment of men in a rowboat.

The distances were determined by observers at the ends of a base line 200 yards long on the parapet of the fort, under the direction of Lieut. J. V. White, First Artillery. The angle of entry into the water was determined with an instantaneous camera. The day was clear and the projectiles perfectly visible throughout their course in the air. The projectiles were reported by Mr. Bushnell to be regulated for a submersion of 7 feet.

Upon examining the projectile after it was drawn ashore it was found that the rubber casing about the regulator had burst and that the top and bottom fins on the left-hand side were broken. Otherwise the projectile appeared to be in good order. No attempt was made to use the rocket arrangement at the tail to accelerate the motion of the projectile under water, and the composition was not ignited by the charge.

Second shot.—This was fired at 12:10 p. m., about one hour after the first.

The charge and elevation were the same as at the first shot.

The projectile made a flight of 271 yards in the air, entered the water at an angle of $20^{\circ} 5'$, and arose, with its axis apparently nearly horizontal, 140 yards from the point at which it struck the water. After the first projectile was fired two stop-watches were obtained, and the time of flight in air of the second was taken by Maj. Phipps, and found to be 3 seconds. The time under water was taken by Gen.

Abbot, and found to be 3 seconds. The projectile floated higher in the water than the first, and was recovered without difficulty. No rocket was attached to this projectile.

Upon examining the projectile it was found that the rubber casing had burst and that the top fin was broken in rear of the rudder pin. The projectile appeared to be in good condition, with the exception of the slight damage above noted.

In both cases the wire that had been wound about the casing of the regulating apparatus, apparently to protect the rubber, was forced back toward the tail as far as the form of the projectile would permit.

It was supposed by the committee that the circumstances attending the firing of the two projectiles were identical, but it afterwards transpired that the horizontal rudder of the second projectile had been given a depression of $2\frac{1}{4}$ degrees, while the rudder of the first had none.

A plat showing the position of the gun and the points at which the projectiles entered and came out of the water, and photographs of the projectiles in flight, accompany this report.

After the firing the chamber containing the regulator was filled with neutral oil, and the projectiles are now stored at Fort Wadsworth.

Very respectfully, your obedient servants,

HENRY L. ABBOT,
Colonel of Engineers, U. S. A.

FRANK H. PHIPPS,
Major, Ordnance Department, U. S. A.

J. C. AYRES,
Captain of Ordnance, U. S. A.

Gen. J. M. SCHOFIELD, U. S. A.

President Board of Ordnance and Fortification.

The Board, after considering this report in connection with the report of the previous trials of these projectiles, decided not to recommend any further allotments of funds for experimenting in this direction.

The reasons for this decision are thus given in the action of the Board on the report above quoted and the letter of the vice-president of the Ericsson Coast Defense Company:

* * * * *

AUGUST 22, 1894.

From the action of the two projectiles in the first trial, it is evident that there is great uncertainty as to their behavior. In the first trial (see page 18, report of the Board for the year ending October 31, 1891) one made a good flight in air, but after diving into the water never reappeared; the other fell flat upon the water and was destroyed by the concussion. In the trial of July 20, with a reduced charge, * * * the second projectile had a depression of $2\frac{1}{4}$ degrees given to its horizontal rudder, which would naturally cause it to enter the water at a more obtuse angle than the first, which had no depression given to the rudder. On the contrary, this projectile entered the water at an angle of $9^{\circ} 45'$ less than the other. The first projectile, instead of rising to the surface through its flotation only, came up plainly point first, indicating that it had gone down to a greater depth than was intended and turned abruptly upward.

The Board further does not have confidence in the method of keeping the axis of this long projectile parallel to the trajectory by means of fins. The progress of the age indicates that only rapid rotation can insure a projectile of such disproportionate length and diameter from tumbling when fired at any considerable range. The range obtained in the experiments of July 20 of less than 300 yards would be useless against an enemy's ship in any conceivable case from a shore battery, and the difficulties in developing the system would undoubtedly increase with the range.

The Board also recognizes the fact that since the inception of the trials with the aërial subaquatic projectile other systems of torpedoes have been greatly developed and it believes that in some one of the forms of torpedo, controllable and dirigible from shore, lie better chances of success in utilizing this method of harbor defense.

* * * * *

The Sims-Edison fish torpedo.—The report of Lieut. Col. W. R. King, commanding engineer station at Willets Point, N. Y., upon the 20 additional runs of this torpedo, recommended by this Board, has been received since the last report.

The following extract from the record of the Board, under date of March 27, 1894, shows the action taken:

* * * * *

The Board considered the indorsement of the Chief of Engineers of March 13, 1894, forwarding report of additional trials with the Sims-Edison electric torpedo, said trials having been conducted in compliance with the Board's recommendation of May 27, 1893.

These trials indicate that the device can not at present be regarded as sufficiently developed to warrant its adoption and purchase, in number, for storage for use in war.

The use of the two dynamos coupled in parallel was not contemplated by the Board in recommending the original purchase of the trial apparatus. The outfit was designed by the inventor for the equipment of a war station, and it was understood that one of the dynamos was proposed to be held in reserve against possible accidents. The employment of high potentials and large electrical currents may be demanded to secure great speed; but in our harbors, where the mine fields will be placed, the tidal currents usually prevailing are gentle, and high speed is far less important than certainty of action. The higher the electrical potentials and currents the greater the chances of failure from breaking down of the apparatus, including the cables. The chief use of the device will be in defending mine fields against attacks of counterminers, and for this purpose high speed may well be sacrificed to secure certainty of action.

It is recommended that such investigations as may be approved by the Chief of Engineers be continued to develop the torpedo now owned by the Government upon the lines above indicated. Allotments to cover the cost of such trials, if desired, will be recommended by this Board from funds applicable to the purpose.

* * * * *

These runs were recommended by the Board for the purpose of ascertaining the percentage of cases in which the torpedo accomplished the object for which the run was made, and with the view to determining the advisability of making further allotments for the purchase of more of this weapon.

BATTERIES.

The sum of \$1,221,000 appropriated by the act of August 18, 1890, to be expended "under the direct supervision of the Board of Ordnance and Fortification" for the construction of gun and mortar batteries, at Boston, New York, and San Francisco, has been wholly expended, as the Board is advised, and no further sums for the construction of batteries have been placed under the supervision of the Board. For information in regard to that subject reference is made to the report of the Chief of Engineers.

QUICK-FIRE GUNS.

Under allotments of the Board, purchase has been made of the following types of quick-fire guns of 4.724-inch caliber (12 centimeters): The Hotchkiss, the Armstrong, the Canét, and the Schneider. The Board had expected that the test of these four types of quick-fire guns would have been made and completed during the past year, but unexpected delay in the delivery of the Canét gun, for which, together with the shield and 500 rounds of ammunition for test, the Board allotted \$32,000, has postponed the test.

These have now been received and the test can proceed as soon as the gun can be mounted. Negotiations with the Maxim-Nordenfelt Guns and Ammunition Company for one of their 4.724-inch guns have been suspended on account of the inability of the company to adopt their guns to the balanced pillar mount, which the Board regards as an important feature.

The comparative test of these guns is expected to take place in the near future. These guns are considered an important auxiliary of

harbor defense, especially for sweeping mine fields and protecting shore batteries against possible land attacks. It is important that the best type should be selected. As long ago as January, 1892, this Board formulated a programme for their test, which will be found in the report for that year at page 20. The main points to be determined are: The rapidity and accuracy of aimed fire against targets at different distances or in different directions; the rapidity and accuracy of aimed fire at moving targets, simulating boats engaged in countermining; and the working and endurance of the gun and its several parts.

RAPID-FIRE GUNS.

There have been acquired under the allotment of the Board, the following 6-pounder rapid-fire guns (2.24-inches caliber): The Hotchkiss, the Seabury, Maxim-Nordenfelt, Sponsel, and the Driggs-Schroeder. These guns are in place at Sandy Hook, and their test is complete, and the results of the test will appear in the annual report of the Chief of Ordnance for the current year, to which reference is made

MACHINE GUNS.

The Robertson 2-barreled machine gun.—This gun, developed through the allotment of the Board, has been tested during the year. Under date of January 4, 1894, the Chief of Ordnance transmitted to the Board the official report of the test, which is made Appendix B to this report.

The mount for this gun being found too light and inadequate, the Board, on August 21, 1894, allotted a sum of \$100 for a tripod mount, and a further sum of \$150 for converting the gun from a .45-caliber to a .30-caliber gun. The Board has also allotted \$100 for test of the modified gun.

The merits of the system are, that it is simple, strong, and light; the feed is positive and such as to overcome any ordinary obstruction, and the gun can be fired at almost any angle of elevation or depression, and should its further test meet expectation, it would be valuable for sweeping ditches or repelling landing parties, especially when considerable depression would be required.

The test of the gun and mount is expected during the coming year.

The Bryan multicharge gun.—This machine gun, offered for test by a private party, and tested under an allotment of the Board by the Ordnance Board, was not found by that Board to be worthy of further development by the United States, in which opinion this Board concurred.

RANGE AND POSITION FINDERS.

Fair progress has been made during the year in the work of testing the many forms of this important adjunct to modern artillery practice, and there is good ground for expectation that the labors of the Board on Range and Position Finders will soon result in the selection of a satisfactory instrument. The progress reports of that Board are appended, marked Appendix C.

Upon the recommendation of this Board Lieut. H. L. Harris, First Artillery, was appointed, May 5, 1894, executive officer of the Range Finder Board, and the detail has much expedited this work.

The following is a brief summary of the results obtained:

Field range finders.—The investigations of the board have led to the rejection of the Broad Arrow, Pratt, and Labbez range finders, and of all other types involving the same optical principle as the sextant, and this Board has concurred in the recommendation.

The reasons for not recommending such instruments are thus stated by the Range Finder Board:

1. They are far more liable to injury than those formed by prisms.
2. They may be out of adjustment without attracting attention.
3. Where the ranged object, eye of the observer, and the object marking the direction of the base are approximately not in the same horizontal plane, the instrument may give very erroneous results without the observers readily detecting the errors. This results from the mirrors not being held vertically, though the direct and reflected images seem to be in the same vertical line.

The Aide-Tiruer and Unge have been practically tested, so far with rather unsatisfactory results. The Nolan and Weldon range finders have not yet been tested.

Seacoast position finders.—The instruments of this class that have been tested are the Lewis and the Watkins depression, and the Fiske electrical range finders. They have given very fair results, as will appear from an inspection of the tables accompanying the report of the Range Finder Board, especially those of August 21, and October 20, 1894.

It will also be noticed that the per cent of error as a rule falls far below the allowed error used in the English service of 1 per cent for each 1,000 yards of range.

The inventor of the Fiske instrument proposes an improvement which, it is claimed, will make the device more accurate, susceptible of closer reading, and less liable to get out of order than the previous form. The Watkins depression range finder has also been tested to some extent, and has given fair results.

The Zalinski range finder has not up to date been presented for trial.

In connection with the subject of range and position finding, the Board has allotted \$202,55 for the purchase of a relocater invented by Lieut. W. C. Rafferty, First Artillery. The position of a battery or gun is often remote from the range finder, and azimuths or ranges taken at the range finder station are generally appreciably incorrect for the gun. It therefore becomes necessary to transform the range finder data into data applicable to the position of the gun. This problem Lieut. Rafferty has solved in a very ingenious way by an application of the principles of trigonometry. When completed the relocater will be thoroughly tested.

Weaver's plotting device.—During the year there was submitted to the Board a new and ingenious plotting device invented by Lieut. E. M. Weaver, Second Artillery, for directing the fire of batteries at moving targets. A series of practical experiments have been conducted with the device at Fort Monroe during the year, and the results have been such that this Board regards it as worthy of further test and development, and has recommended the reference of the subject matter to a special board to be appointed and known as the Board on the Regulation of Seacoast Artillery Fire.

At its meeting on October 23, 1894, this Board took action looking to the practical application of range and position finders, as follows:

* * * * *

In view of the fact that the investigations of the Board on Range and Position Finders show that the problem of selecting a satisfactory range finder is so near solution, this Board believes that the time has come to develop a method of using this instrument such as will be required in actual service. The Board on Range

and Position Finders is only authorized to ascertain and report upon the merits of the different forms of range finders; but in addition to this it is desirable that a complete system should be devised and settled upon by means of which any battery or any gun in the defenses can be quickly and accurately trained upon an advancing vessel. Several important questions must be determined: The number of instruments that will be required; the most advantageous positions for them; the means of communicating with the guns; the method of converting the data given by the range finder into data utilizable at the gun, which may be many hundred yards distant, etc. The Board proposes New York Harbor as the proper place to inaugurate a typical system of this kind.

It is therefore recommended that a board of three artillery officers be appointed, to be designated "the Board on the Regulation of Seacoast Artillery Fire," to be selected preferably from those who have evinced the greatest interest in this subject, and who are or can be stationed in the vicinity of New York, to develop and recommend a practical system of utilizing seacoast range finders and directing the fire of the fortifications at the Narrows against an attacking fleet. Such a board should have the use of the appliances at the forts in the harbor and the assistance of details of officers and enlisted men when necessary. It should apply to the Board of Ordnance and Fortification for the allotment of such funds as are required for its work, and should also make its reports to this Board.

The board should meet at the call of the senior member at such times and at such points in New York Harbor as may be necessary to carry out the scheme of investigation above outlined.

SMOKELESS POWDERS.

Tests and experiments have been continued with smokeless powders during the year and the Board has made an allotment of \$2,400 for that purpose. But the time would seem to have now come when experiments with this modern explosive should be entered upon more extensively with a view to determining and selecting the best for service in the various types and calibers of guns and mortars. The Board recommends a liberal appropriation for this purpose. This is one of the main experimental objects that should engage early attention. (See estimates.)

The sudden outbreak of the war in the Orient, and the liability to like unforeseen hostilities in Europe, admonishes that we can not too early prosecute to solution the problem that would instantly confront us in case of war.

HIGH EXPLOSIVES.

The subject of high explosives was, as in previous years, under the charge of a committee of the Board, consisting of Gen. H. L. Abbot and Maj. Clifton Comly up to the time of the latter's death, since which date Maj. Frank H. Phipps has been connected with this work. In view of the importance of this subject, and of the interesting and instructive nature of the committee's report, it is here embodied in full, as follows:

ARMY BUILDING,
New York City, October 23, 1894.

GENERAL: The committee on high explosives has the honor to submit the following report upon its work accomplished during the past year.

In June, 1894, Maj. Phipps was appointed a member of the committee, vice Maj. Comly, deceased. The firing at Sandy Hook has been conducted under the direction of the Chief of Ordnance by Capt. Frank Heath, Ordnance Department, to whom the committee is indebted for much valuable assistance.

The following extracts from the programme adopted by the Board for these investigations are quoted from the last annual report for convenience of reference:

"(1) *Which is the best explosive for use in shells?*—To decide this point we must consider (a) safety in handling and storage, regard being had to ordinary shocks and friction in handling, to deterioration in store, and to extremes of heat and cold; (b) intensity of action when exploded; and (c) density of loading. Should the trials prove that several varieties of high explosives can be safely fired in projectiles the ultimate choice between them will depend on these considerations, and they should also largely influence the order in which trials are made. * * *

"(2) *Is an explosion of the first order of detonation assured with the different modes of loading proposed by the inventors to prevent premature explosion?*—To test this matter it is proposed to explode duplicate sets of cast-iron shells like those shown on page 299, Report of the Chief of Ordnance for 1884 (caliber, 8-inch; cavity, 5 inches in diameter and 10 inches deep; capacity, about 192 cubic inches, or 6.9 pounds of water). One set will be charged precisely as proposed by the inventor; the other will contain the same amount of the explosive in a compact mass, with the rest of the cavity sand-filled. The projectiles will be placed at the bottom of holes about 8 inches in diameter and 4 or 5 feet deep, bored in uniform clay soil and tamped with sand. From the measured crater radii after the explosion it is believed that a fair idea can be formed as to whether the loading devices reduce the order of the explosion.

"(3) *Will the explosive stand the friction due to rifled motion when loaded as proposed?*—To obtain more definite information as to the heating effect of this motion than is now available, it is proposed to communicate a high rotary velocity to projectiles by mechanical means and thus investigate the subject practically.

"(4) *Will the explosive stand the shock of firing when loaded as proposed by the different inventors?*—To test this matter it is proposed to purchase one hundred 7-inch and fifty 11-inch projectiles of the pattern described above, and to fire them from the 7-inch Ames gun and from the 11-inch converted muzzle-loading rifle at Sandy Hook. (During the year 1893, firing from the 12.2-inch experimental mortar with full service charges—78 pounds brown prismatic powder—was added to this programme.)

"All these experiments should be made by firing at long ranges over water, so that a practical test of the effect of rifled motion, as well as the shock of firing, may be had.

"(5) *Will the igniting mechanism stand the shock of firing and the rifled motion without premature action?*—This matter should be tested quite independently of the explosive, which may be accomplished by using shells charged with powder in a field or siege gun, or perhaps by charging several primers in one shell, thus reducing expense.

"(6) *Will the igniting mechanism act as desired?*—This may be tested by firing shells charged with powder.

"(7) *Will the shell, without the igniting mechanism, explode on impact (a) with water, (b) with earth, (c) with stone, (d) with wood or wrought iron, and (e) with iron armor?*—Information on some of these points will be obtained incidentally, and the others may be left for future consideration."

The following summary gives the operations during the season just closed:

DETERIORATION IN STORE.

Emmensite having been proved by the trials already reported to possess decided merits for use in shells, it seemed desirable under heading (1) of the programme to obtain definite figures to determine the care needful to prevent absorption of moisture, to which this explosive, owing to its composition, is peculiarly liable.

On September 26, 1893, a sample was taken from a wooden box lined with paraffine paper which had been on hand several months at Sandy Hook, and which was in perfect condition. This sample, weighing 25.363 grams, was protected against dust, but freely exposed to the air in a room in the Army building, New York City. The windows were usually open except in inclement weather. The building was warmed by steam between October 15, 1893, and April 29, 1894, inclusive. Frequent measurements of weight were made on a balance reading to 1 milligram. The following table exhibits the results obtained under these conditions; it was noted that the weight increased and diminished with the general hygroscopic state of the atmosphere. The great change between January 19 and February 24 will be explained below:

Date.	Weight of Emmensite (grams).			Percentage of weight.		Remarks.
	Total.	Gain.	Loss.	Gain.	Loss.	
1893.						
Sept. 26	25.363					} Smelled strongly of nitrobenzine at first, but by Oct. 2, 1893, the odor had nearly disappeared.
27	25.291		0.072		0.3	
29	25.198		.165		.7	
Oct. 2	25.100		.263		1	
3	25.254		.109		.4	
7	26.123	0.760		3		
9	26.068	.705		2.8		
10	25.667	.304		1.2		
13	25.653	.290		1.1		
21	25.301		.062		.3	
23	26.126	.763		3		
28	26.913	1.550		6		
Nov. 31	25.313		.050		.2	
1	25.100		.263		1	
2	25.123		.240		1	

Date.	Weight of Emmensite (grams).			Percentage of weight.		Remarks.
	Total.	Gain.	Loss.	Gain.	Loss.	
1893.						
Nov. 4.....	25.163		0.200		0.8	
7.....	25.051		.312		1.2	
15.....	25.033		.330		1.3	
17.....	24.998		.365		1.4	
Dec. 2.....	25.248		.115		.5	
4.....	25.013		.360		1.4	
16.....	25.198		.165		.6	
26.....	24.963		.400		1.6	
30.....	24.943		.420		1.6	
1894.						
Jan. 19.....	24.893		.470		1.9	Began special trial.
Feb. 21.....	35.193	9.850		38.8		Removed water and left in air, as at first.
26.....	32.413	7.050		27.8		Ring of fluid had wholly disappeared.
27.....	30.663	5.300		20.9		
28.....	29.783	4.420		17.4		Explosive caked, but still damp.
Mar. 1.....	29.563	4.200		16.6		
2.....	29.290	3.927		15.5		
3.....	29.063	3.700		14.6		
5.....	28.713	3.350		13.4		
6.....	28.558	3.105		12.6		
7.....	28.433	3.070		11.7		
8.....	28.283	2.920		11.1		
9.....	28.151	2.784		10.9		
10.....	28.038	2.675		10.5		
12.....	27.813	2.450		9.6		
13.....	27.693	2.330		9.2		
14.....	27.563	2.200		8.6		
16.....	27.288	1.925		7.6		
19.....	27.098	1.735		6.8		
22.....	26.723	1.360		5.5		Hard caked. Stirred up thoroughly with knife. Ammonium nitrate separated in crystals.
23.....	26.366	1.003		4		
24.....	25.773	.410		1.4		
26.....	25.318		.045		.2	
29.....	24.943		.420		1.6	
31.....	24.846		.517		2	
Apr. 2.....	24.768		.595		2.3	
9.....	24.783		.580		2.3	
13.....	24.798		.565		2.2	
21.....	25.273		.080		.3	Damp weather several days.
25.....	24.848		.515		2	Dry day.
30.....	24.813		.550		2.2	
May 30.....	27.903	2.540		10		
June 13.....	27.948	2.585		10.1		
19.....	29.878	4.515		17.8		Damp day.
22.....	30.343	5.980		23.6		Hot damp air. Fluid in bottom.
July 7.....	31.903	6.540		25.8		Much free fluid.
14.....	30.883	5.520		21.8		Has been dry weather.
17.....	31.213	5.850		23.1		
19.....	31.983	6.620		26		
28.....	32.893	7.530		29.7		Hot damp days—much fluid.
31.....	32.033	6.670		26.3		
Aug. 4.....	32.813	7.450		29.4		
6.....	31.763	6.400		25.5		Dry—much fluid.
10.....	31.213	5.850		23.1		
25.....	30.513	5.150		20.3		Clear day—fluid as usual.
30.....	32.093	6.730		26.5		Damp air.
Sept. 1.....	30.203	4.900		19.3		Dry air.
5.....	32.298	6.935		27.3		Hot foggy day.
7.....	32.908	7.545		29.7		
21.....	34.983	9.620		38		Much fluid.
26.....	31.758	6.395		25.2		
29.....	31.818	6.455		25.5		Less fluid.
Oct. 10.....	30.881	5.518		21.8		
13.....	29.378	4.015		15.8		No fluid.
19.....	26.985	1.622		6.4		Dry and solid.
22.....	27.468	2.105		8.3		

Deeming it important to obtain records of this character for an atmosphere practically saturated with moisture like that found in damp casemates in our fortifications, a change in the conditions of the experiment was made on January 19. The evaporating dish containing the sample of Emmensite was placed under a close

glass cover together with a beaker glass, 2½ inches in diameter and 3¼ inches high, filled with water. The warm atmosphere of the room favored evaporation, and a marked increase occurred in the moisture absorbed by the explosive, as is shown by the following table. On February 24, a maximum having been apparently reached, with considerable free fluid round the Emmensite, the beaker glass containing water was removed and the original conditions of the experiment were resumed. As appears from the foregoing table, the comparatively dry air of the heated room in about a month reduced the weight of the sample to that originally noted, followed by an increase when exposed to the damp atmosphere of the summer and autumn. Steam heat was introduced in the building on September 26, 1894, and continued at intervals until the termination of the experiments.

Date.	Weight of Emmensite (grans.)			Percentage of weight.		Remarks.
	Total.	Gain.	Loss.	Gain.	Loss.	
1894.						
Jan. 19.....	24, 893	.....	0. 470	.....	1. 9	
20.....	25, 763	0. 400	.....	1. 6	.....
22.....	26, 673	1. 310	.....	5. 2	.....
23.....	27, 183	1. 820	.....	7. 5	.....
27.....	29, 713	4. 350	.....	17	.....
31.....	30, 233	4. 870	.....	19. 2	.....
Feb. 14.....	34, 661	9. 298	.....	36. 6	.....	Ring of fluid around mass.
15.....	34, 803	9. 440	.....	37. 2	.....
16.....	34, 833	9. 470	.....	37. 5	.....
19.....	35, 228	9. 863	.....	38. 9	.....
24.....	35, 193	9. 830	.....	38. 8	.....	Removed water and left in air, as at first.

These records demonstrate that Emmensite must be stored in close vessels which will effectively prevent any access of damp air. Shell in store, coated on the interior with paraffin, charged with Emmensite and closed at the base with an air-tight plug, would seem to meet the requirements of service.

SUBTERRA SHELL TRIALS.

The methods used under headings (1) and (2) of the programme are described in detail in Appendix E of the annual report of this Board for the year ending October 30, 1891, to which reference is here made.

The only explosive presented for investigation during the past year is Leonard powder, which as a smokeless variety for the propelling charge in small arms and cannon of moderate calibers has already been under trial at Sandy Hook. The sample tested by us as a high explosive for use in shells had failed to pass the requirements for stability at Frankford arsenal, but being in perfect condition it was deemed suitable for these experiments by the company submitting it. Its composition was the following:

	Parts.
Nitro-glycerin	66
Tri-nitrocellulose	22
Lycopodium	11
Urea crystal	1
Total	100

The two ingredients last named vary in amount in different samples of the powder. The variety subjected to subterra tests was yellowish brown in color, and consisted of small grains in the form of truncated right cylinders, of which there were about 100 to the gram. The grains yielded readily to compression, although much harder than explosive gelatin or forcite. Placed on a stone and struck with the hammer the powder decrepitated sharply.

Three charges were fired at Fort Hamilton, September 5, 1894, in the standard 8-inch shell, to determine the intensity of action when ignited with primers of different strength.

Subterra shell No. 1.—The charge was 6.5 pounds, which filled the shell cavity after a moderate degree of compression with a wooden rammer. The primer was a service submarine mining fuse containing 24 grains of mercuric fulminate surrounded with 1.5 ounces of dry gun cotton and well bedded in the mass.

The hole was 5 feet deep, the distance from the ground level to the base of the shell being 3.2 feet. Adding 0.5 foot for the distance to the center of the charge, gave for the line of least resistance 3.7 feet.

The explosion was sharp, throwing a large mass of earth into the air. The crater was fairly regular in form, giving the following radii, at equal distances round the circumference. The record is consecutive and in the direction of motion of the hands of a watch: 4.1 feet, 4 feet, 4.2 feet, 3.8 feet, 3.4 feet, 3.7 feet, 4.2 feet, and 3.7 feet. The mean, or 3.90 feet, is the true crater radius. Hence, for the equivalent of 6.5 pounds of this powder: $C = \frac{1}{17} \left[3.7 + \frac{7}{8} (3.90 - 3.70) \right]^3 = 3.44$ pounds explosive gelatin.

Sub-terra shell No. 2.—The charge was 6.5 pounds. The primer was a service submarine mining fuse containing 24 grains of mercuric fulminate well bedded in the mass.

The hole was 5 feet deep, placing the base of the shell 3.2 feet below the ground level and giving for the line of least resistance 3.7 feet.

The explosion was similar to the first. The plug was thrown high in air and broken into several pieces. The following is the record of the crater taken at equal distances round the circumference, consecutively, and in the direction of motion of the hands of a watch: 4.5 feet, 4.2 feet, 4 feet, 4.2 feet, 4.1 feet, 4.5 feet, 4.3 feet, 4.2 feet. The mean or 4.25 feet, is the true crater radius. Hence, for the equivalent of 6.5 pounds of this powder—

$$C = \frac{1}{17} \left[3.7 + \frac{7}{8} (4.25 - 3.70) \right]^3 = 4.30 \text{ pounds explosive gelatin.}$$

Subterra shell No. 3.—The charge was 6.5 pounds. The primer was a service electrical cannon primer, containing only gunpowder. It was well buried below the surface of the Leonard powder.

The hole was 5 feet deep, placing the base of the shell 3.2 feet below the ground level and giving 3.7 feet for the line of least resistance.

The explosion was similar to the other two. The plug was cracked on top on several radii and slightly chipped on one side, but not broken materially. The following is the record of the crater taken consecutively at equal distances round the circumference, and in the direction of motion of the hands of a watch: 4.6 feet, 4.3 feet, 3.7 feet, 3.6 feet, 3.5 feet, 3.9 feet, 4.4 feet, and 4.1 feet. The mean, or 4.01 feet, is the true crater radius. Hence, for the equivalent of 6.5 pounds of this powder—

$$C = \frac{1}{17} \left[3.70 + \frac{7}{8} (4.01 - 3.70) \right]^3 = 3.77 \text{ pounds explosive gelatin.}$$

The soil, parched by the exceptionally long drought, was dusty and not in a favorable condition for experiments of this nature, but the results are believed to warrant the conclusion that no variation in intensity of action was caused by the different modes of ignition, but that all the explosions were cases of full detonation. Also, that a mean of the three results may be regarded as a fair measure of the relative intensity of this powder as compared with explosive gelatin. If so, the mean, or 3.84 pounds of explosive gelatin, would be required to perform the same work as 6.5 pounds of this grade of Leonard powder. Hence, the latter has 0.59 of the intensity of action of the former. It has already been reported as the result of similar trials made by us in former years that Emmensite and wet gun cotton have corresponding ratios of 0.56 and 0.51, respectively.

The relative merit of different high explosives for use in shells may be estimated by their earth-lifting power when forming craters in earthen parapets. This power is measured by the product of their intensities, determined as above by their density of loading. The latter is measured relatively by the weight which can be inserted in the standard shell. The first lot of these shells had a capacity of 192 cubic inches, but in the lot now in use it is reduced to 186 cubic inches. The former is adopted as the standard, and the charge of 6.5 pounds should therefore be increased in this ratio, making it 6.7 pounds. The relative merit of these three explosives is accordingly:

Emmensite	0.56 × 9.8 = 5.49
Gun cotton	0.51 × 6.2 = 3.16
Leonard	0.59 × 6.7 = 3.95

These figures of merit for the explosives heretofore tested by us, and submitted in previous annual reports of the Board, are as follows:

Perunite B	1.44 × 12.2 = 17.57 (failed in other respects).
Perunite C	1.28 × 12.2 = 15.61 (failed in other respects).
Perunite D	1.12 × 12.2 = 13.66 (failed in other respects).
Americanite A	0.38 × 7.5 = 2.90 (failed in other respects).
Americanite B	0.47 × 11.5 = 5.42 (failed in other respects).
Explosive gelatin	1.00 × 10.0 = 10.00
Rackarock	0.78 × 12.0 = 9.36
Emmensite	0.56 × 9.8 = 5.49
Ammonite B	0.53 × 7.1 = 3.76 (failed in other respects).
Ammonite A	0.44 × 7.5 = 3.30 (failed in other respects)
Gun cotton, wet	0.51 × 6.2 = 3.16
United States rifle powder ..	0.23 × 7.5 = 1.72

To determine whether Leonard powder undergoes any change when exposed to the damp atmosphere of the seacoast, a sample weighing 55.585 grams was exposed from September 5 to October 10. During this period it gradually lost 0.140 grams, or about three-tenths of 1 per cent.

From these figures it appears that Leonard powder, although inferior to Emmensite, is superior to gun cotton in intensity of action, and is much superior to Emmensite in the matter of deliquescence when exposed to dampness. Your committee therefore deemed it worthy of further trial in the 7-inch gun. The result was a failure, as will appear below:

ROTATION TRIALS.

Since the date of the last report no experiments have been made to carry out heading 3 of the programme, as no new explosive other than a sample of the Leonard smokeless powder has been submitted to the Board for trial, and this failed to fulfill the requirements of paragraph 4.

SHOCK IN THE GUN.

With the view of making possible the use of high explosives of great intensity as shell charges for powder guns, various devices for relieving the explosive from the shock at discharge, and the tendency to generate heat by friction during flight, have been presented.

The complicated devices so far submitted occupy much of the interior cavity of the shell, and it is believed that sufficient intensity of action can be obtained from some of the less powerful varieties, such as Emmensite and wet gun cotton packed in the usual simple way.

Both of these explosives, as already reported, have stood the test of repeated firings in the 7-inch and 11-inch rifles, and, in charges of about 100 pounds, in the 12.2-inch mortar.

A 15-inch Rodman gun has been rifled during the past year and firings from it will soon be undertaken to continue the trial of these two explosives in shell charges as large as 200 pounds. When a high power rifle can be obtained for this purpose their action under higher velocities and pressure will be determined.

The only new explosive submitted to the Board during the year were samples of the Leonard smokeless powder, one of which is referred to above under the head of subterra trials. They were claimed to be suitable for shell charges, but before submitting them to trials in a gun their intensity of action was first tested in the explosion chamber.

A 7-inch shell, which had been fired from the Ames rifle against a 4-inch plate, was filled with 5 pounds of one of the samples of this powder. With one-half ounce of ordinary black powder introduced as an igniter the shell was exploded by means of an electric primer. The explosion was extremely violent, 621 pieces of the shell being collected. This result being so satisfactory, the three samples were fired from a 7-inch Ames rifle against a 4-inch plate. All exploded on impact. In these firings the propelling charge of spherio-hexagonal powder was reduced to 11½ pounds, that being the amount necessary to carry the shell through 4 inches of iron.

Subsequently, however, when a full propelling charge of 25 pounds was used the shell exploded in the gun, cracking it. The maximum effect of the explosion appeared to be where the point of the projectile had rested before firing. No further experiments with this powder were attempted.

IGNITING MECHANISM.

The six varieties of detonating fuses referred to in the last report of the Board have not stood the crucial tests to which they have been subjected during the current year. Others, since submitted, have also failed.

The subject is, however, receiving the attention it merits, and better results are hoped for from experiments now in progress.

EXPLOSION OF SHELLS ON IMPACT.

In continuation of the trials under heading 7 of the original programme, two shells charged with 7½ pounds of Emmensite were fired from the 7-inch Ames rifle against a target of 3-inch oak, placed about 50 yards from the gun. The propelling charge was 25 pounds of spherio-hexagonal powder. Both shells penetrated the target, struck the bench, and glanced off into the water without explosion.

Two shells were also fired from the 12.2-inch mortar at an angle of elevation of 42° 11'. One of the shells held 110 pounds 13½ ounces of Emmensite, and the other 106 pounds 1 ounce. The propelling charge in both cases was 20 pounds of brown

prismatic powder. This low charge was used fearing the effects should explosion occur farther down the beach. The range was about 2,200 yards. The shells buried themselves in the brush and sand without explosion.

As this Emmensite had been stored in the magazine at Sandy Hook since December 15, 1892, it was thought possible that it might have deteriorated in that time. To ascertain if this was so, about 6 pounds were placed in a 7-inch shell, with two small cubes (4 ounces) of dry gun cotton and about 30 grains of mercuric fulminate as a detonator. This charge, fired in the explosive chamber by means of an ordinary electric primer, exploded with extreme violence, indicating that the Emmensite had lost little, if any, of its strength by storage. It had remained packed, as supplied by Dr. Emmens, in ordinary wooden boxes, lined with paraffin paper, and otherwise unprotected.

RECOMMENDATIONS.

The following programme is suggested for continuing these trials in the future:

(1) With subterra shells, with the rotating machine, with the 7-inch Ames gun, with the 11-inch muzzle-loading rifle, with the 12.2-inch mortar, and with the rifled 15-inch gun, such tests as may be needed from time to time to determine the merits of any new explosive or mode of loading which may be approved by the Board for trial.

(2) With 8-inch high-power B. L. rifle. Trials to test the safety of firing Emmensite and wet gun cotton with higher velocities and pressures than can be given in the lower-power guns heretofore available.

(3) The continuation (under headings 5, 6, and 7 of the original programme) of the trials with igniting mechanism and of the trials to determine the effect of concussion of charged shells against different solid materials.

Respectfully submitted.

HENRY L. ABBOT,
Colonel of Engineers, Bct. Brig. Gen., U. S. A.

FRANK H. PHIPPS,
Major, Ordnance Department, U. S. A.

Maj. Gen. J. M. SCHOFIELD,
President of the Board of Ordnance and Fortification.

SPECIAL GUN FOR HIGH EXPLOSIVES.

On January 9, 1894, in order to further determine the practicability of firing large charges of Emmensite from rifled guns, with powder charges, as stated in the foregoing report on high explosives, the Board made an allotment of \$5,810 to enable the Chief of Ordnance to rifle a 15-inch S. B. Rodman gun, and to mount the same, also to procure 10 specially designed cast-steel shells for said gun, capable of carrying about 200 pounds of said explosive.

On September 26, 1894, the sum of \$750 was allotted for the same objects, and on October 25 a further sum of \$800, for 10 cast-iron projectiles for preliminary firings, making a total of \$7,360 allotted for this purpose.

The work is progressing satisfactorily, and it is expected that during the coming year these and other experiments of like nature will be completed.

While it is believed that 100 pounds of this explosive would be decisive when exploded within a ship, it has been thought prudent to explore further in that direction, so as to be prepared to meet any such demand.

TELEGRAPHIC COMMUNICATION.

The telegraphic communication between Fort Wadsworth and Fort Hamilton, New York Harbor, for experimental purposes, for which allotment was made September 6, 1893, has been completed and is in use for the purpose designed; that is, the test of range and position finders.

The map of New York Harbor, to be used for the same purpose, allotted for October 25, 1893, has been completed for the Board by the Engineer Department without the use of the allotment provided.

SEARCH LIGHT.

The search-light apparatus for experimental purposes, to be tested at Sandy Hook, for which the Board allotted the sum of \$5,900, has been received and installed.

A balance of \$700 was left from the amount so allotted, which, together with a further sum of \$1,050, the Board allotted for the construction of a search-light tower, and for the installation of the plant; making total cost \$6,950.

The search light, which is of 150 cm. mirror diameter, has been tested in part, and the Board recommends that when the test shall have been completed it be removed to Fort Monroe, Va., to be used for instruction in the artillery school.

SANDY HOOK.

Among the allotments made during the year for the purpose of facilitating experimental work at the proving ground, but which also add to the permanent improvement of the post, the following are here named:

For mounting 16-mortar battery for experimental group firing	\$2, 000. 00
For platform for pneumatic mortar carriage.....	1, 200. 00
For platform for rapid-fire guns.....	1, 000. 00
For platform plates for 10 and 12 inch barbette carriages	2, 318. 92
For search-light tower and installation.....	1, 750. 00
For observation room for conducting experimental work.....	600. 00
Total.....	8, 868. 92

MISCELLANEOUS.

Among the objects which have engaged the attention of the Board during the year the following are named:

(a) Design for a 12-inch disappearing gun carriage, by Col. S. M. Mansfield, U. S. Engineers.

(b) A new rapid fire breech mechanism by Axel Welin.

(c) Projectiles: The Justin projectile for carrying high explosives.

(d) Test of special armor plates (Chase and Gantt).

(e) Detonating fuses.

(f) The Best telescopic sight and Whistler elevating arc.

In some of these cases allotments have been made for developing or testing.

ESTIMATES FOR COMING YEAR.

At its meeting of September 25, 1894, the Board, after careful examination and consideration, adopted, and directed the transmission, of the following estimates of the amounts required for the prosecution of the experimental work for the ensuing year, aggregating \$300,000, as follows:

For the investigation and test of smokeless powders with a view to determine the best type for adoption for service in seacoast, siege, field, rapid-fire, and machine guns	\$50, 000
For platforms, emplacements, etc., for gun carriages, and expenses incidental to the test.....	25, 000
For testing seacoast guns.....	25, 000
For experiments with high explosives.....	10, 000
For procuring experimental gun carriages.....	100, 000
For procuring and experimenting with sights, range finders, and position finders.....	5, 000
For possible premiums on pneumatic disappearing gun carriage.....	50, 000
For purchase and test of fuses.....	10, 000
For necessary expenses of Board, including salary of civilian member.....	10, 000
Contingencies	15, 000
Total	300, 000

None of the objects here included are covered by previous appropriations.

While all these sums may not be absolutely required during the year, the Board ought to be provided with the funds in order to be prepared to meet the demands which may be made upon it.

It is impossible to anticipate what occasions may arise in the experimental work, and it is important that the appropriation should be made, as heretofore, in general form.

CONCLUSION.

The year has been one of positive and satisfactory advance. The want of suitable disappearing carriages for 8-inch and 10-inch high-power guns, which has so long retarded the completion of emplacements, is believed to be obviated, and that we now have such carriages of American invention, unequalled for rapidity of action by anything heretofore invented.

Nothing now stands in the way of immediate completion of the contemplated mortar batteries, which form so important a factor in the defense of our seaports, but the want of appropriations. Every element pertaining to the mortars, the carriages, the platforms, and the batteries has been successfully worked out. We already have a large number of these excellent arms ready for utilization as soon as means are provided for the emplacements and for mounting them.

The supply of seacoast guns is constantly increasing, and the mounts are fully developed for each of the calibers.

That there are additional candidates for favor need not delay the supply of those already fully tested and approved for the sites to which they are adapted.

The development and test of auxiliary defenses, such as submarine mines, movable torpedoes, rapid-fire and quick-fire guns, and range and position finders, have reached a stage where we have only to make choice of the best. All are in a good state of advancement.

Among the fields to be further explored are the investigation and development of smokeless powders, further experiments with high explosives, to determine one or more that can be safely fired with the highest velocities now obtained from high-power guns; new types of center-pintle carriages for 8 and 10 inch guns, with reference to the greatest cover, compactness, and speed of maneuvering; the possible development of a disappearing carriage for 12-inch guns that shall afford sufficient protection at a minimum cost; the practical development of the minimum-port casemate carriage for 12-inch guns; the development of armored casemate batteries and turrets for 16-inch guns where the positions require them, and the development and test of new projectiles and armor plates. All these and other fields remain to be explored. The problems grow constantly less in number and less urgent; but we must nevertheless recognize that increase in the means and improvement in the methods of attack will require constant advance in the means and methods of defense.

Time is now the greatest element in our national defense. Every forward step in the development of our defensive system diminishes the probability that any nation will put its efficiency to the test.

The time has fully come when Congress may make the most liberal appropriations for gun and mortar batteries and for their armament, with the assurance that they will be expended judiciously.

Many of the new sites are acquired; the emplacements are fully planned, ready for construction; the types of service seacoast guns and

mortars are decided upon and tested; the carriages for nearly all calibers and types of seacoast ordnance are developed and ready for manufacture in quantity—in short, every important element of the system is so far worked out and adopted that, with adequate appropriations, nothing need stand in the way of the completion of our national defensive system within a few years.

The Board therefore feels justified in recommending, as it now does, that far more liberal appropriations than heretofore be made for the construction and armament of our works of defense.

J. M. SCHOFIELD,

Major-General Commanding U. S. Army, President of the Board.

HENRY L. ABBOT,

Colonel of Engineers, Bvt. Brig. Gen., U. S. Army.

HENRY W. CLOSSON,

Colonel, Fourth Artillery, U. S. Army.

FRANK H. PHIPPS,

Major, Ordnance Department, U. S. Army.

BYRON M. CUTCHEON,

Civilian Member, Board of Ordnance and Fortification.

J. C. AYRES,

Captain, Ordnance Department, Recorder of the Board.

APPENDIX A.

Table showing allotments made by the Board of Ordnance and Fortification from October 31, 1893, to October 31, 1894, including statements of unexpended balances under the several appropriations.

[Act of September 22, 1888.]

Purpose of allotment.	Date.	Sec- tion.	Amount.
Additional for repairs and improvements to the 5-inch siege carriage, Raskazoff pattern	1893. Dec. 5	3	\$115.57
For the completion of the mounting of mortars, 16 in all, in the experimental battery at Sandy Hook	Dec. 6	3	2,000.00
For rifling one 15-inch S. B. gun, altering a carriage for mounting it, mounting of gun on carriage and erection of a suitable traverse, and for procuring 10 cast steel 15-inch shell having a capacity for about 200 pounds of Emmensite, with the view of using the same for experimenting with high explosives	1894. Jan. 9	3	5,810.00
For the construction at Fort Wadsworth, New York Harbor, of a range-finder house for, and the installation of, the Zalinski range and position finder	Feb. 20	6	450.15
For the erection at the Sandy Hook Proving Ground by the Chief of Ordnance of inner and outer platform plates for mounting experimental 10 and 13 inch barbette carriages, and for mounting certain carriages for rapid-fire guns	Feb. 20	6	2,318.92
Additional for the construction of a 12-inch Gordon spring-return mortar carriage	Feb. 20	6	385.00
For the purchase of a 6-pounder Seabury rapid-fire gun, to be tested in connection with other guns of a similar character	Feb. 21	6	1,485.00
For the further test of the Robertson 2-barrel .45-caliber machine gun	Feb. 21	6	100.00
To enable the Chief of Ordnance to prepare the necessary backing for and the erection of an experimental armor plate to be presented by the Midvale Steel Company for test	Mar. 27	6	1,000.00
For repairs to the 5-inch siege rifle fitted with the Seabury breech mechanism, to be used in the test of the Raskazoff-Bracebridge siege carriage	Apr. 27	3	60.00
To enable the Chief of Ordnance to purchase certain material in connection with the test of range and position finders	June 5	6	277.28
To enable the Chief of Ordnance to have constructed a carriage for the test of the 8-inch Haskell multicharge gun, in accordance with the plans and estimates submitted by the Reading Iron Company in their letter of May 26, 1894	June 5	6	8,600.00
For the alteration of azimuth circles in connection with the installation and test of the Lewis, Fiske, and Zalinski range and position finders	June 6	6	40.00
To enable the Chief of Ordnance to have tested at Fort Monroe, Va., the system of plotting and directing the fire of batteries at moving targets devised by First Lieut. E. M. Weaver	June 25	6	60.00
\$55 for purchase of four range scales and \$20 additional for cost of attachments to four azimuth circles, heretofore authorized by the Board	July 5	6	75.00
To enable the Chief of Ordnance to provide a platform for the 12-inch pneumatic mortar carriage to be presented for test free of cost to the United States by the Pneumatic Gun Carriage and Power Company	July 7	6	1,200.00
For providing a tripod mount for the Robertson machine gun and for necessary changes in the gun, including the alteration of the caliber thereof from .45 to .30	Aug. 22	6	250.00
For expenses connected with the setting up and test of the Gordon 12-inch spring return mortar carriage, at the Sandy Hook proving ground	Aug. 22	6	450.00
To enable the Chief of Ordnance to purchase a "relocator" designed by Lieut. W. C. Rafferty, First Artillery	Aug. 22	6	175.00
Additional for cost of rifling a 15-inch Rodman smooth-bore gun, altering and erecting a carriage therefor, and procuring ten 15-inch shell for use in connection with tests of high explosives	Sept. 26	6	750.90
To enable the Chief of Ordnance to defray certain expenses connected with the test of high explosives	{Sept. 26 }	3 6	261.10 38.90
To enable the Chief of Ordnance to complete the manufacture of ten 15-inch cast-steel shell for use in experiments with high explosives	Oct. 24	3	400.00
For the purchase of about 1,500 pounds of Emmensite by the Chief of Ordnance to be used in experiments with high explosives	Oct. 24	6	600.00
To enable the Chief of Ordnance to build an additional platform at Sandy Hook for mounting cannon used in testing high explosives	Oct. 24	6	500.00
For test of pneumatic 12-inch mortar carriage, for test of Gordon 12-inch mortar carriage, and for working up base percussion fuses for service (part of total allotment; see also acts of 1890, 1891, 1892, and 1893)	Oct. 24	6	674.75
Total			28,076.67

REVOCATIONS OF ALLOTMENTS.

ACT OF SEPTEMBER 22, 1888.

Allotment of July 12, 1893, for purchase of Schneider 12 cm. quick-fire gun revoked November 9, 1893, under this act and allotted under act of July 23, 1892.....	\$8,000.00
Allotment of April 17, 1889, for the purchase of one Mefford gun, revoked December 5, 1893.....	18,000.00
Allotment of May 2, 1890, for the purchase of Col. Theodore Yates's breech-closing device for 3.2-inch standard field rifle, revoked December 5, 1893.....	250.00
Allotment of May 6, 1891, to procure two type apparatus proposed by Mr. Henry Hess (range finders), revoked December 5, 1893.....	110.00
Allotment of February 24, 1892, for 500 rounds of ammunition for the Yates 3.2-inch gun, revoked December 5, 1893.....	1,470.00
Total	27,830.00
Total allotted to October 31, 1893 (see last annual report)	3,971,753.33
Revocations of allotments since October 31, 1893.....	27,834.00
Total remaining allotted	3,943,923.33
Allotted from October 31, 1893, to October 31, 1894	28,076.67
Total allotted to date	3,972,000.00
Total appropriated under this act.....	3,972,000.00
Total allotted.....	3,972,000.00
Balance available for allotment	

ACT OF MARCH 2, 1889.

Total allotted, expended, and reverting to Treasury to October 31, 1893 (see last annual report)	\$1,250,819.00
Allotted from October 31, 1893, to October 31, 1894	
Total allotted to date	1,250,819.00
Total appropriated under this act	1,289,594.00
Total allotted, expended, and reverting to Treasury to October 31, 1894.....	1,250,819.00
	38,775.00
Reappropriated in act of August 18, 1890 (see first report of Board, p. 37)	14,000.00
Balance available for allotment	24,775.00
The above balance is available <i>only</i> for the purchase of movable submarine torpedoes.	

ACT OF AUGUST 18, 1890.

Purpose of allotment.	Date.	Amount.
	1894.	
For expenses incurred in the transportation of the Zalinski range and position finder	Jan. 9	\$5.11
For completing the test of the 5-inch Brown segmental wire gun.....	Jan. 10	3,484.00
Additional to defray freight charges on experimental powders purchased abroad.	Sept. 25	277.16
To enable the Chief of Ordnance to purchase abroad types of rapid fire field guns, carriages, and ammunition.....	Oct. 24	9,000.00
To enable the Chief of Ordnance to procure 10 cast iron 15-inch projectiles for preliminary firings with the 15-inch rifled gun to be used in experiments with high explosives	Oct. 24	800.00
For powder and projectiles for the test (100 rounds) of the pneumatic 12-inch mortar carriage	Oct. 24	7,000.00
Total		20,566.27

REVOCATION OF ALLOTMENT.

Unexpended balance of allotments made for test of 5-inch Brown segmental wire gun, revoked September 25, 1894.....	\$2,565.44
Total allotted and expended to October 31, 1893 (see last annual report).....	3,808,608.50
Allotted from October 31, 1893, to October 31, 1894.....	20,566.27
Total allotted and expended to date	3,829,174.77
Allotment revoked.....	2,565.44
Remaining allotted	3,826,609.33
Total appropriated under this act.....	3,832,935.00
Total net allotments.....	3,826,609.33
Balance available for allotment	20,325.67

ACT OF FEBRUARY 24, 1891.

Purpose of allotment.	Date.	Amount.
For the purchase by the Chief of Ordnance of one Best telescopic sight and one Scott telescopic sight.....	1893. Dec. 5	\$384. 93
Additional for the purchase of one "Aide-Tireur" range finder	1894. Jan. 9	51. 29
Additional to complete the Haskell 8-inch multi-charge gun..... or the preparation of working drawings of the proposed Adams 10-inch disappearing gun carriage.....	Mar. 27	20. 80
For test of Gordon 12-inch mortar carriage (100 rounds) and for working up base percussion fuses for service (part of allotment for this purpose. See also acts of 1890, 1892, and 1893).....	Apr. 27	300. 00
	Oct. 24	681. 14
Total		1, 438. 16

REVOCATIONS OF ALLOTMENTS.

Allotment of October 25, 1893, for preparation of map of New York Harbor, revoked February 20, 1894	\$150. 00
Balance of allotment of \$1,275 made September 6, 1893, for establishment of direct telegraphic communication between Forts Hamilton and Wadsworth, revoked March 27, 1894	848. 70
Total.....	998. 70
Allotment to October 31, 1893. (See last annual report).....	2, 290, 363. 54
Allotments revoked.....	998. 70
Remaining allotted	2, 289, 364. 84
Allotted from October 31, 1893, to October 31, 1894	1, 438. 16
Total allotted to date.....	2, 290, 803. 00
Total appropriated under this act.....	2, 290, 803. 00
Balance available for allotment.....	

ACT OF JULY 23, 1892.

Purpose of allotment.	Date.	Amount.
For the purpose of one 12 cm. Schneider quick-firing gun and mount with cast-iron shield, provided there be furnished working drawings of the gun, breech mechanism, mounting, shield, and carriage.....	1893. Nov. 9	\$8, 000. 00
For the preparation of a suitable platform, butts, velocity screens, etc., for test of 6-pounder rapid-fire guns	1894. Jan. 10	1, 000. 00
For the construction by the Chief of Ordnance of a small observatory room nearer the line of battery at Sandy Hook than the present office, in order that better shelter may be afforded the officers conducting tests at the proving battery ...	Jan. 10	600. 00
For the erection of a tower at Sandy Hook 60 feet in height for the electric search light for seacoast defense.....	Feb. 21	1, 050. 00
For the purchase and test of samples of smokeless powder of American invention in the discretion of the Chief of Ordnance.....	June 6	2, 400. 00
For the purchase by the Chief of Ordnance of 8 sets of telephone cords, 6 feet long, for the head receivers of the telephones furnished by the Chief Signal Officer, to be used in connection with the test of range and position finders....	Sept. 26	12. 00
For the necessary expenses of the Board, including salary of civilian member, from Oct. 31, 1893, to Oct. 31, 1894.....		8, 149. 13
For ammunition for test of 12-inch Gordon mortar carriage and for ammunition for working up base percussion fuses for service (part of total allotment for this purpose. See acts of 1891 and 1893).....	Oct. 24	1, 488. 36
Total		22, 699. 49
Allotted and expended to October 31, 1893. (See last Annual Report)		\$187, 001. 24
Allotted and expended from October 31, 1893, to October 31, 1894.....		22, 699. 49
Total allotted and expended to date.....		209, 700. 73
Total appropriated under this act		210, 000. 00
Total allotted and expended to date		209, 700. 73
Balance available for allotment.....		* 299. 27

* This balance has since been expended for necessary expenses of Board. There are, therefore no funds available for allotment or expenditure under this act.

ACT APPROVED FEBRUARY 18, 1893.

Purpose of allotment.	Date.	Amount.
For the preparation by the Chief of Ordnance of drawings of the saddle connection of the Armstrong 12-cm. quick-fire gun and mount.....	1893. Dec. 27	\$100.00
To enable the Chief of Ordnance to have erected at the Sandy Hook proving ground, in front of the modified Gordon 10-inch disappearing gun carriage, a suitable wall of timber for the purpose of determining what will be the effect of the blast from the discharge of the gun when mounted on this carriage.....	1894. Aug. 22	1,500.00
Additional for the purchase by the Chief of Ordnance of a Rafferty relocater....	Oct. 24	27.55
To enable the Chief of Ordnance to defray cost of removing and reinstalling the electric search-light and its plant at the Sandy Hook proving ground.....	Oct. 25	350.00
For ammunition for test of Gordon 12-inch mortar carriage (100 rounds), and for ammunition for 12-inch B. L. mortar in working up base percussion fuses for service (part of total allotment for this purpose; see also acts of 1891 and 1892).	Oct. 24	8,655.75
Total		10,633.30
Allotted to Oct. 31, 1893.....		\$74,350.00
Allotted from Oct. 31, 1893, to Oct. 31, 1894.....		10,633.30
Total allotted to date.....		84,983.30
Total appropriated under this act ...		125,000.00
Total allotted to date.....		84,983.30
Balance available for allotment		40,016.70

ACT APPROVED AUGUST 1, 1894.

Purpose of allotment.	Date.	Amount.
For the purchase by the Chief of Ordnance of brown powder for experimental firings with seacoast guns.....	1894. Oct. 24	\$20,000
For the purchase of a second 10-inch pneumatic disappearing gun carriage, in accordance with the provisions embodied in this act.....	Oct. 23	50,000
Total		70,000
Total appropriated under this act.....		150,000
Total allotted to date.....		70,000
Balance available for allotment.....		80,000

SUMMARY TO OCTOBER 31, 1894.

Appropriations.	Total appropriations.	Total allotments, expenditures, and reverting to Treasury.	Total balances on hand not allotted or expended.	Total allotments and expenditures from Oct. 31, 1893, to Oct. 31, 1894.	Allotments revoked from Oct. 31, 1893, to Oct. 31, 1894.	Total net allotments from Oct. 31, 1893, to Oct. 31, 1894 (including necessary expenses).
Fortification act of Sept. 22, 1888.....	\$3,972,000.00	\$3,972,000.00		\$28,076.67	\$27,830.00	\$246.67
Army appropriation of Mar. 2, 1889	56,000.00	{ 3,156.20 52,843.80				
Fortification act of—						
Mar. 2, 1889	1,233,594.00	1,194,819.00	\$24,775.00			
Aug. 18, 1890	3,832,935.00	3,826,609.33	20,325.67	20,566.27	2,565.44	18,000.83
Feb. 24, 1891.....	2,290,803.00	2,290,803.00		1,438.16	998.70	439.46
July 23, 1892.....	210,000.00	209,700.73	†299.27	22,699.49		22,699.49
Feb. 18, 1893.....	125,000.00	84,983.30	40,016.70	10,633.30		10,633.30
Aug. 1, 1894.....	150,000.00	70,000.00	80,000.00	70,000.00		70,000.00
Total	11,870,332.00	11,704,915.36	*165,416.64	153,413.80	31,394.14	122,019.75

*Of this balance \$299.27 have been expended and \$29,275.00 are for specific purposes, leaving a balance of \$135,842.37 actually available for general allotment.
†This amount (\$299.27) has since been expended for necessary expenses of Board.

Total net allotments to date	\$11,625,514.99
Total expenditures for necessary expenses of Board	26,556.57
Total turned into Treasury	443.80
Total reverting to Treasury by lapse of appropriation.....	52,400.00
Grand total	11,704,915.36

APPENDIX B.

PROCEEDINGS OF A BOARD OF OFFICERS CONVENED AT SPRINGFIELD ARMORY, MASS.

The board was convened by virtue of the following order:

POST ORDERS, No. 43.

SPRINGFIELD ARMORY, MASS., *November 24, 1893.*

[Extract.]

II. A board of officers is hereby appointed to meet at this armory on Monday next, the 27th instant, to test the Robertson machine gun. The test will be conducted according to programme approved by the Chief of Ordnance on November 2, 1893.

Detail for the board: Capt. S. E. Blunt, Ordnance Department; Capt. D. M. Taylor, Ordnance Department; Second Lieut. A. L. Dade, Tenth Cavalry.

By order of Col. A. Mordecai:

D. M. TAYLOR,
Captain, Ordnance Department, U. S. Army, Post Adjutant.

SPRINGFIELD ARMORY, MASS., *November 27, 1893.*

The board met pursuant to the foregoing order; present, all the members. Mr. Robertson, the inventor of the gun, was also present, and at the request of the board explained the mechanism and action of the gun and what were claimed as its peculiar merits. The board then proceeded to test the gun according to the approved programme (*see below*), completing tests 1; 2, (a) and (b); and 3, (a) and (b), with results as given in the synopsis of tests.

The board then adjourned to meet again November 28, 1893.

SPRINGFIELD ARMORY, MASS., *November 28, 1893.*

The board met pursuant to adjournment. Present, all the members and Mr. Robertson. The board then proceeded with the programme of tests, completing tests 4 (a) and (b) and 5 (a) and (b), with results as given in the synopsis of tests. At the request of Mr. Robertson the board decided to omit the test (6), which involved firing at 2,000 yards. The board were of the opinion that owing to the vibration of the carriage during firing, and the consequent inaccuracy of fire, especially as regarded elevation, the test could not be conducted on the range with safety.

The board then adjourned to November 29, 1893.

SPRINGFIELD ARMORY, MASS., *November 29, 1893.*

The board met pursuant to adjournment. Present, all the members and Mr. Robertson. The board then proceeded with the programme of tests, completing tests 7, 7 (a), 8, 9, 10 (a) and (b), with results as

given in synopsis of tests; and a supplementary test, rubbing powdered rosin on the cartridge cases and firing the cartridges so prepared, with results as given in synopsis of tests. The "missfires" were then subjected to a second and third firing, with results as given in synopsis of tests; then so much of test 11 as to include inserting the gun in the rusting solution and placing it in the proper spot for the necessary two days' exposure was made.

The board then adjourned to meet December 1, 1893.

SPRINGFIELD ARMORY, MASS., *December 1, 1893.*

The board met pursuant to adjournment. Present, all the members and Mr. Robertson. The board then completed test 11, with results as shown in synopsis of tests. Mr. Robertson then submitted to the board a letter which was read to the board.

The board then adjourned to December 2, 1893.

SPRINGFIELD ARMORY, MASS., *December 2, 1893.*

The board met pursuant to adjournment. Present, all the members. The gun, dismounted and cleaned, was then examined by the board and the functions of each piece of the mechanism and the operation of the whole observed. With the exception of the cooling device, all the parts and the assembled mechanism appeared to be in as good condition and to perform their functions as well as before they had been subjected to test. From the results of these tests as expressed in the "synopsis of tests" herewith appended, and also from personal observation of the gun during firing, the board has arrived at the following conclusions:

(1) That the barrel-cooling device does not fulfill the object for which it was devised, but is a useless and objectionable addition to the gun.

(2) That the actual time of firing 100 shots varied between 26 seconds when fired rapidly and $14\frac{1}{2}$ seconds when fired with the extreme rapidity attainable with the gun, with an additional time for changing reels, varying between $6\frac{1}{2}$ and 12 seconds.

(3) That the actual time of firing 500 shots varied in a similar manner between 1 minute 47 seconds and 1 minute 22 seconds, with an additional time for changing reels varying between 57 and 68 seconds.

(4) As it would probably not be practicable to use reels of a greater capacity than 100 cartridges, an allowance must be made for the time required to remove and empty and substitute a full reel. It is therefore apparent that the capacity of the gun in one minute lies between about 200 shots when fired rapidly to about 270 or 300 shots when fired with the extreme rapidity attainable with the gun.

(5) The mount was too light and of insufficient stiffness. It was without provision for preventing or limiting lateral oscillation. The elevating device was without provision for clamping the elevating screw.

(6) The carriage was much too light, the shock of discharge causing so much movement as to destroy the aim. It was so light that the aim was destroyed by firing, even when the wheels and trail were well chocked.

(7) It is essential that the cartridges for the gun be carried in bands or strips especially designed for the purpose. A special tool is necessary for charging the strips and for removing the fired cartridges

therefrom; and this is also an operation which requires considerable time. Cartridges in the original packages as provided for small arms would not be immediately available for this gun.

There, being no further business before it, the board then adjourned *sine die*

S. E. BLUNT,
Captain, Ordnance Department.

D. M. TAYLOR,
Captain, Ordnance Department.

A. L. DADE,
Second Lieutenant, Tenth Cavalry.

SPRINGFIELD, MASS., November 30, 1893.

GENTLEMEN: I trust you will not deem it out of place on my part if I beg to make some explanations in regard to my gun.

In the first place, this is the first and only gun I have had constructed, and it could not be expected that it would be as perfect in all its parts and workings as if it was an old gun on the "market" for sale, and made by a regular gun factory.

The carriage on which it is mounted is excessively light, and does not provide sufficient weight against recoil to shoot accurately at long ranges.

My object was to produce a light mountain (or rough country) gun, which, with 4 ammunition boxes, each box containing 4 reels of 100 cartridges (total, 1,600 rounds) could be handled by two men, up hill or down; and for slow firing, say about at the rate of 200 per minute, would do good execution.

Still I think 100 pounds more weight in the carriage would be a decided improvement.

(2) It is my purpose to provide an extra pair of barrels with each gun, to guard against accidents and to be used in case of long-continued firing to prevent excessive heating. The barrels can be removed and a new pair substituted in less than one minute.

(3) The reels—by an error in calculation—only hold a string of 70 cartridges, whereas it was my intention and desire that they should carry 100 or more. Had they been so constructed I could have made much better time in the rapidity test. The reels, empty, only weigh a few ounces, and cost about 50 cents to \$1 each.

(4) The feed links should be constructed slightly different, with a small lip on one of the open ends, slightly turned up, to facilitate stringing them together.

These links are so cheap that they would not ordinarily be worth picking up after firing, though they can be emptied and used many times. A large number of them can be carried in a small space, as a small box 2 by 4 by 8 inches holds 1,000.

The ammunition would ordinarily be prepared at the arsenal in strings of 100. It packs very closely two strings together.

The front yoke which holds the barrels together is bored so as spread them a full one-sixteenth inch. This will spread the shots about 5 feet at 1,000 yards.

You will notice the extreme simplicity of construction and strength of parts, there being no extractors (the weak part of all guns) and no springs, except the two main springs; and in case one of these breaks another can be put in in about one-half minute.

The feed is positive. A failure to extract is impossible, as was shown by the rosin test, and a jam is almost an impossibility; the two slight stoppages that occurred during the firing were not really jams of the cartridges or shells, but a slight hitch in one of the links, and only occurred when not using the reels, and took about one or two seconds to fix.

From the tests I made of the gun before I came up here I became convinced that the carriage was excessively light, that the cooling device was of doubtful utility, and that the feed reels should be larger and placed on the left side instead of the right, so that the person placing them in position for firing would not interfere with the turning of the crank.

These, however, are minor defects easily overcome, and do not affect the working parts of the gun.

I desire to return my thanks to the Board and to Col. Mordecai for the uniformly courteous and gentlemanly treatment accorded me during my stay here.

I am, gentlemen, very respectfully,

GEO. ROBERTSON.

The BOARD ASSEMBLED FOR TEST OF ROBERTSON MACHINE GUN.

PROGRAMME FOR TEST OF THE ROBERTSON MACHINE GUN.

1. Into sand butt at 10 yards; 100 shots fired deliberately to determine action of gun.
2. At target 12 by 30 feet; distance, 500 yards.
 - (a) Aim fixed; 100 shots fired rapidly; time and hits noted.
 - (b) Aim oscillating along target; 500 shots fired rapidly; time and hits noted.
3. At target 12 by 30 feet; distance, 500 yards.
 - (a) Aim fixed; 100 shots fired with extreme rapidity attainable with the gun; time and hits noted.
 - (b) Aim oscillating along target; 500 shots fired with extreme rapidity attainable with the gun; time and hits noted.
4. At target 12 by 30 feet; distance, 1,000 yards.
 - (a) Aim fixed; 100 shots fired rapidly; time and hits noted.
 - (b) Aim oscillating along target; 500 shots fired rapidly; time and hits noted.
5. At target 12 by 30 feet; distance, 1,000 yards.
 - (a) Aim fixed; 100 shots fired with extreme rapidity attainable with the gun; time and hits noted.
 - (b) Aim oscillating along target; 500 shots fired with extreme rapidity attainable with the gun; time and hits noted.
6. At target 12 by 50 feet; distance, 2,000 yards; aim direct; 500 shots fired rapidly; time and hits noted.
7. Into sand butt at 10 yards; 100 shots fired deliberately, every fifth cartridge being a dummy. To test effect of misfires upon action.
 - (a) Into sand butt at 10 yards; 100 shots fired with moderate rapidity, without the cooling device.
8. Dust. With the mechanism closed, the gun to be exposed, in a box prepared for that purpose, to a blast of fine sand dust for one minute; surplus sand removed by blowing thereon and wiping with the bare hand, and then the gun fired 100 rounds.
9. Excessive charges. Five cartridges in which the weight of powder or bullet, or of both, shall be so increased as to produce a chamber pressure about one-third greater than that given by the service cartridge for the gun.
10. Defective cartridges. The gun to be fired twice with each of the following defective cartridges.
 - (a) Cross-filed on head to nearly the thickness of the metal.
 - (b) Cut at intervals around the rim.
11. Rust. The mechanism to be cleansed of grease and the gun to be placed in a solution of sal-ammoniac for ten minutes, the mechanism being covered; afterwards exposed for two days to the open air and then fired 100 rounds.

Each of the tests that include firing at a target to be preceded by a sufficient number of sighting shots to insure accuracy of aim.

Such additional tests or repetitions or modifications of the above to be made as may appear advisable as the trial progresses.

A. MORDECAI,

Colonel, Ordnance Department, U. S. Army, Commanding.

SPRINGFIELD ARMORY, MASS., October 5, 1893.

SYNOPSIS OF TESTS.

1. Into sand butt at 10 yards; 100 shots fired deliberately to determine action of gun.
The mechanism worked well. There were two (2) misfires. At close of firing the barrels were too hot to be borne by the bare hand, and the jacket was perceptibly warm. The reels hold only 70 cartridges, therefore in firing 100 rounds one reel of 70 and another of 30 cartridges were used.
 2. At target, 12 by 30 feet; distance 500 yards.
 - (a) Aim fixed; 100 shots fired rapidly; time and hits noted.
 - (b) Aim oscillating along target; 500 shots fired rapidly; time and hits noted.
- (a) Aim was verified by sighting shots. A reel of 70 and a string of 30 cartridges were used. Firing was begun with barrels and jacket cool. At end of firing barrels were too hot to touch with bare hand. Jacket was warm. Total time of firing 38 seconds, 12 seconds of which were consumed in changing reel. A slight jam occurred in feeding the string of 30. After first few shots, smoke obscured the target so that no aim could be taken. Total hits, 51. In this firing the wheels were chocked with blocks placed in rear of them, but the oscillation and movement of the carriage were so great that in succeeding tests it was secured as noted in 2 (b).

(b) Aim was verified by sighting shots. The vibration of carriage and mount was so great that it was deemed inadvisable to attempt to oscillate aim along target; it was therefore held direct. Before firing the carriage was secured in position by placing two rails about 5 feet long, one in rear and one in front of wheels, and fastening them in position with stakes. Stakes were also driven outside and against wheels and in rear of and against the trail.

Seven reels of 70 cartridges each and a separate string of 10 were used to make up the 500 rounds. The firing was begun with the barrels and jacket cool; at end of firing barrels and jacket were too hot to be borne with bare hand. The tank was warm and the seam in the jacket was defective about one-third way forward and a stream of hot water and steam escaped during the firing. A slight escape of water and steam occurred at the front end of the jacket at its junction with the yoke. Total time of firing, 2 minutes 25 seconds, of which 57 seconds were consumed in changing reels. The intervals in order were 5, 8, 7, 12, 13, 11, 6 seconds. Total hits, 120; missfires, 7. The mechanism worked well and easily.

3. At target, 12 by 30 feet; distance, 500 yards.

(a) Aim fixed; 100 shots fired with extreme rapidity attainable with the gun, time and hits noted.

(b) Aim oscillating along target; 500 shots fired with extreme rapidity attainable with the gun, time and hits noted.

(a) Aim was verified by sighting shots. Reels of 70 and 30 cartridges, respectively, were used. The firing was begun with the barrels and jacket cool enough to be borne by the bare hand. At close of firing both were too hot to be borne by the bare hand. The jacket was leaking steam and hot water at front and rear ends and along the seam, the second of these leaks having developed during this firing. The mechanism worked well. Total time of firing, 29 seconds, of which 8 seconds were consumed in changing reels. Total hits, 40.

(b) Aim was verified by sighting shots. Seven reels of 70 each and a separate string of 10 cartridges were used. The vibration of carriage and mount was so great that it was deemed inadvisable to attempt to oscillate aim along target; it was therefore held direct. Firing was begun with barrels and jacket cool; at close of firing barrels and jacket were too hot to be borne by the bare hand. The jacket leaked at the same places as noted above. There was a strong smell of burning rubber, apparently from the effect of the hot jacket on the rubber tube connecting it with the tank. Mechanism worked well. Total time of firing, 2 minutes, 25 seconds, 57 seconds being consumed in changing reels. The intervals in order were 7, 14, 7, 10, 7, 7, 5 seconds. The longest interval was caused by a fumble on the part of the operator who changed the reels. The operator at the crank began to feel the effects of previous firings, otherwise the total time might have been less. Total hits, 131; missfires, 4.

4. At target, 12 by 30 feet; distance, 1,000 yards.

(a) Aim fixed; 100 shots fired rapidly; time and hits noted.

(b) Aim oscillating along target; 500 shots fired rapidly; time and hits noted.

(a) Aim was verified by sighting shots. Reels of 70 and 30 cartridges, respectively, were used. Barrels and jacket cool at beginning of firing. At close barrels were too hot to be borne by the bare hand; jacket was warm. Total time of firing, 28 seconds, of which 6½ seconds were consumed in changing reels. Mechanism worked well and easily. Total hits, 6.

(b) Aim verified by sighting shots. Seven reels of 70 cartridges each and a string of 10 were used. The vibration of carriage and mount was so great that it was deemed inadvisable to attempt to oscillate aim along target; it was therefore held fixed and direct. Barrels and jacket cool when firing began; both were too hot to touch with bare hand several minutes after firing. After first few shots there was a continuous escape of steam and boiling water from the jacket carried back upon the operator at the crank. Hot air, rising from the heated barrels, created a mirage and the target was obscured by the steam and smoke. The water in the tank was exhausted during this test. Total time of firing, 2 minutes 55 seconds; 68 seconds were consumed in changing drums or reels, the intervals being, in order, 7½, 8, 9, 8½, 16, 9, 10 seconds. The longest interval was due to a fumble by the assistant. Total hits, 51; missfires, 3.

5. At target, 12 by 30 feet; distance, 1,000 yards.

(a) Aim fixed; 100 shots fired with extreme rapidity attainable with the gun; time and hits noted.

(b) Aim oscillating along target; 500 shots fired with extreme rapidity attainable with the gun; time and hits noted.

(a) Aim verified by sighting shots. (The tank was refilled previously.) Reels of 70 and 30 cartridges, respectively, were used; barrels and jacket cold when firing began; at close of firing both were hot, but not so hot as in previous tests. An examination at the end of firing showed that the aim was still good. Total time of

firing, 22 seconds, including an interval of $7\frac{1}{2}$ seconds for changing reels. Total hits, 8.

(b) Aim verified by sighting shots. The vibrations of carriage and mount were so great that it was deemed inadvisable to attempt to oscillate aim along target; it was therefore held direct. Seven reels of 70 cartridges each and a string of 10 were used. Barrels and jacket were cool when firing began; at close of firing, barrels were extremely hot. Jacket was too hot to be borne by the bare hand, and the tank was hot. At the close of firing, the aim was found to be too high, the force of the recoil having moved the elevating screw. Total time of firing, 2 minutes 20 seconds, including intervals amounting to 58 seconds for changing reels. The intervals, in order, were $7\frac{1}{2}$, 9, 9, $8\frac{1}{2}$, $9\frac{1}{2}$, 10, $4\frac{1}{2}$ seconds. Total hits, 5; missfires, 2.

6. At target 12 by 30 feet; distance 2,000 yards. Aim direct; 500 shots fired rapidly; time and hits noted.

Test omitted, the board believing that, owing to the vibration of the carriage during firing and the consequent inaccuracy of fire, especially as regards elevation, the test could not be conducted on the range with safety.

7. Into sand-butt at 10 yards; 100 shots fired deliberately, every fifth cartridge being a dummy, to test effect of missfires upon action.

The introduction of dummies had no effect upon the operation of the mechanism.

(a) Into sand butt at 10 yards; 100 shots fired with moderate rapidity without the cooling device.

The removal of the cooling device appeared to have no effect upon the temperature of the barrels, they not seeming materially hotter after firing than when the device had been used.

8. Dust. With mechanism closed the gun to be exposed in a box prepared for that purpose to a blast of fine sand dust for one minute, surplus sand removed by blowing thereon and wiping with the bare hand, and then the gun fired 100 rounds. Mechanism worked easily and well; 1 missfire.

9. Excessive charges. Five (5) cartridges in which the weight of powder or bullet or both shall be so increased as to give a chamber pressure about one-third greater than that produced by the service cartridge for the gun.

No effect noticeable except a slight creasing of the shell near the head. Mechanism worked easily and well.

10. Defective cartridges. The gun to be fired twice with each of the following defective cartridges.

(a) Cross filed on head to nearly the thickness of the metal.

(b) Cut at intervals around the rim.

(a) No damage whatever to gun, mechanism worked well and easily.

(b) No damage whatever to gun, mechanism worked well and easily.

Supplementary test. Rubbing powdered rosin on the cartridge cases, and firing the cartridges so prepared.

Two cartridges were so prepared and fired, then 2 more, then 10. Although the cases after firing were gummy and sticky, the extraction was found to be easy.

The missfires, 18 in number, were then subjected to a second and third firing. Nine were fired on the second and 2 of the remainder upon the third trial. The remaining 7 were then tried in a Springfield rifle and all were discharged at the first trial.

11. Rust. The mechanism to be cleansed of grease and the gun to be placed in a solution of sal-ammoniac for ten minutes, the mechanism being covered. Afterwards to be exposed for two days to the open air and then fired 100 rounds.

All working parts of the gun being nickel plated, the gun was not much rusted. The mechanism worked easily. One missfire.

REPORT OF A BOARD OF OFFICERS TO MAKE SUPPLEMENTARY TESTS
OF THE ROBERTSON GUN.

The board was convened by the following order:

POST ORDERS, No. 19.

SPRINGFIELD ARMORY, MASS., *March 23, 1894.*

A board of officers is hereby appointed to meet at this armory on Monday next, the 26th instant, to make supplementary tests of the Robertson machine gun, in accordance with instructions of the Chief of Ordnance.

Detail of the board: Capt. D. M. Taylor, Ordnance Department; Second Lieut. A. L. Dade, Tenth Cavalry; Second Lieut. J. M. Sigworth, Tenth Infantry; Second Lieut. C. B. Hagadorn, Twenty-third Infantry.

By order of Col. Mordecai.

D. M. TAYLOR,
Capt., Ord. Dept., U. S. A., Post Adjutant.

SPRINGFIELD ARMORY, MASS., *March 24, 1894.*

In compliance with the foregoing order the board met to-day. Present: Capt. Taylor, Lieut. Sigworth, and Lieut. Hagadorn. Absent, sick, Lieut. Dade.

An examination of the gun mounted upon the Gardner gun carriage, with an additional support beneath the elevating screw, was made by the board, and the mount was pronounced to be the most satisfactory available without constructing a new carriage.

PROGRAMME OF TESTS.

It was deemed expedient by the board to repeat certain portions of the programme previously prescribed. (See ante.)

1. Not necessary to repeat.
2. (a) Repetition unnecessary.
(b) Impossible, owing to the fact that the oscillation permitted by the carriage would cover a target 200 feet long, and as the ammunition used was black powder, after the first few shots the smoke would obscure the target from view.
3. (a) Deemed expedient to repeat.
(b) Impossible. Replaced by 500 shots, aim fixed, fired with extreme rapidity attainable.
4. (a) Not necessary to repeat.
(b) Not necessary to repeat.
5. (a) Deemed expedient to repeat.
(b) Impossible. Replaced by 500 shots, aim fixed, fired with extreme rapidity attainable.
6. To be considered upon subsequent firings.
- 7, 7a, 8, 9, 10, and 11. Repetition deemed unnecessary.

The board then adjourned awaiting the arrival of the inventor, Mr. Robertson.

SPRINGFIELD ARMORY, MASS., *March 28, 1894.*

Pursuant to adjournment, the board met to-day. Present: Capt. Taylor, Lieut. Sigworth, Lieut. Hagadorn, and the inventor, Mr. Robertson. Absent, sick, Lieut. Dade.

The board then proceeded to carry out the programme adopted.

In all subsequent firing chocks were placed behind the wheels and the trail was set as firmly into the ground as could be done by pounding and stamping.

As the sights on the gun were not properly adjusted, the position was determined by means of sighting shots, which ordinarily were below the bull's-eye.

SYNOPSIS OF TESTS.

3 (a). At target 12 by 30 feet; distance, 500 yards.

Aim fixed. One hundred shots fired with extreme rapidity attainable with the gun; time, 14 seconds; 47 hits.

The barrels were cool at the beginning of the firing; hot at the end of 100 shots. It was observed that the hits gradually crept up the target, finally passing over the top.

3 (b). At target 12 by 30 feet; distance, 500 yards.

Aim fixed. Five hundred shots fired with extreme rapidity attainable.

Two hundred shots were fired without difficulty. Toward the middle of the third hundred the mechanism jammed, and it was observed that every other cartridge was failing. The firing was suspended, and upon examination it was found that one of the screws holding the firing bolt in place had fallen into the box of the gun. After three minutes' work the gun was in readiness for firing again.

Two hundred and sixty-nine shots had been fired, giving 153 hits, 3 failures.

3 (b'). Five hundred shots fired with extreme rapidity attainable with the gun; time, 1 minute 40 seconds.

It took from 9 to 11 seconds to change a reel, during which change opportunity was afforded to change the operator at the crank without delay.

The barrels were very hot after firing, the mechanism cool; 370 hits, 2 missfires.

4 (a). At target 12 by 30 feet; distance, 1,000 yards.

Aim fixed; 100 shots fired with extreme rapidity; time, 25 seconds; no hits.

The mechanism jammed four times, owing to cartridges slipping in the links; 2 missfires. Strong wind at 2 o'clock. All of the shots passed over the target and to the right.

The sighting shots were below the bull's-eye.

The board adjourned to meet on the following day to complete the programme.

SPRINGFIELD ARMORY, MASS., *March 29, 1894.*

Pursuant to adjournment the board met to-day. Present, Capt. Taylor, Lieut. Sigworth, and Lieut. Hagadorn; also the inventor, Mr. Robertson. Absent, sick, Lieut. Dade.

SYNOPSIS OF TESTS.

5 (b). At target 12 by 30 feet, distance 1,000 yards, aim fixed, 500 shots fired with extreme rapidity attainable. Time, 1 minute 40 seconds; 26 hits, 2 missfires. Three operators turned the crank, changing at the end of each hundred, while reels were being changed. The sighting shots were on the target below the bull's-eye, but most of the shots passed over the top and to the right of the target.

The tests at 200 yards, called for in the fifth indorsement of the president of the Board of Ordnance and Fortification, dated War Department, Washington, D. C., January 10, 1894, were then made by the Board.

The tendency of the muzzle to rise during firing having been clearly developed at the other ranges, and the position of the 200-yard target

in the vicinity of a railroad track demanding caution, no attempt was made to fire at this range with extreme rapidity.

One hundred shots, aim fixed, were fired with ordinary rapidity; the sighting shots struck about 3 feet below the center of the bull's-eye. The mark of the shots as the firing progressed showed that the muzzle was steadily rising, and the last shots of the series struck 9 feet above the first. Ninety-three hits were obtained; no missfires.

Another string of 100 was prepared, aim being taken as before, and after 74 shots had been fired rapidly it was found that the shots were striking within 1 foot of the top of the target. Further firing with this series was therefore suspended. Seventy-four hits; no missfires.

The results of these series showed that it was impracticable to attempt to fire 500 rounds as a series either rapidly or slowly at this range.

The tendency of the gun to fire high toward the close of the series was so marked that the Board did not consider it could with safety make any firings at the 2,000-yard range.

The cartridges which failed during the test were fired successfully in a Springfield rifle.

At the request of the inventor, Mr. Robertson, who furnished new barrels for the purpose, two short strings of 30-caliber cartridges were fired.

The first target of 47 shots shows a lateral dispersion of 2 feet 3 inches, with a vertical dispersion of 2 feet 3 inches. A good grouping of the shots was obtained with the left barrel. The second target of 23 shots shows a vertical dispersion of 2 feet 6 inches, with a lateral dispersion of 2 feet 6 inches.

The Board is of opinion that the gun proper is remarkably simple in construction, and especially to be commended for the strength and small number of its parts, the total absence of springs except the mainspring, and the improbability of its being disabled by any of the ordinary accidents of service.

The mount and carriage employed with the gun during these trials gave much better results than were obtained with the original carriage and mount. But the tendency of the muzzle to rise during firing, while diminished by the use of this carriage and mount, was not eliminated, and this tendency, until absolutely counteracted, constitutes, in the opinion of the Board, a fatal objection to the use of the gun in service.

Until the gun can be tested with a mount and carriage which will overcome these objections, the Board is unable to give an opinion as to its merits in comparison with other machine guns of like caliber in the service. By this the Board means that a gun whose maximum capacity of fire is only 500 shots in a little less than two minutes under the most favorable circumstances, and whose fire at this rate can only be maintained for a short time owing to there being only two barrels and they constantly in action and thus heating very rapidly, will only be valuable in service if its construction be such as to allow of a mount and carriage light and compact enough to admit of its use with flying columns in mountainous districts and with the fighting line. If it shall be determined that for its use a carriage and mount are required as heavy as for the 10-barrel Gatling, the Board has no hesitation in recording as its opinion that the Robertson gun has no place in the service. If, however, a carriage and mount much lighter than this can be employed, the Board believes that the gun can be made very useful.

The gun is not, in the opinion of the Board, of the same class as the 10-barrel Gatling or other machine guns of a greater number of barrels, and a comparison between them can hardly be made. It is intended

for special purposes, and will be useful or not according as to whether or not a mount and carriage sufficiently light and compact can be devised for it.

It is proper here to say, perhaps, that as a result of the firings the Board is of opinion that the difficulties observable in the use of the gun as at present mounted arise from the mount and not from the gun or carriage. The cause of these is briefly as follows: The axis of the barrels is about 1 foot above the center of rotation. The drum upon which the clamp screw bears has a radius of about 3 inches, hence the force of recoil of the two barrels, fired almost simultaneously, operating with its long lever arm, is too great to be successfully controlled by the friction of the clamp screw upon a drum of so small a diameter. An additional oak support was therefore placed beneath the rear end of the gun 1 foot from the axis of rotation. The effect of this was to transfer the force of the recoil from the drum to the trail at a point nearly 1 foot from the axis of the axle of the carriage. The repeated blows upon a point so far down the trail had a tendency to drive the trail in the ground, thus causing the muzzle to rise.

The force of the blows was made evident by a deep indentation upon the top of the oak support.

There being no further business before it, the board adjourned *sine die*.

D. M. TAYLOR,
Captain, Ordnance Department.

A. L. DADE,
Second Lieut., Tenth Cavalry.

JOHN M. SIGWORTH,
Second Lieut., Tenth Infantry.

CHARLES B. HAGADORN,
Second Lieut., Twenty-third Infantry.

The foregoing proceedings and opinions of the board are approved.

A. MORDECAI,
Colonel, Ordnance Department, U. S. A., Commanding.

APPENDIX C.

PROCEEDINGS OF A BOARD OF OFFICERS TO TEST RANGE AND POSITION FINDERS.

The board was convened by Special Orders, Nos. 249 and 258, Headquarters of the Army, Adjutant-General's Office, series of 1890.

FORT WADSWORTH, NEW YORK HARBOR,
April 3, 1894—11 a. m.

The board met pursuant to the call of the president.

Present: Lieut. Col. A. C. M. Pennington, Fourth Artillery; Capt. John G. D. Knight, Corps of Engineers; First Lieut. Edw. Davis, Third Artillery.

Absent: Maj. W. P. Miller, Fifth Artillery, sick; Capt. D. M. Taylor, Ordnance Department, who telegraphed the president that he was detained on duty at the Colt's Armory, Hartford, Conn., and would reach New York to-night.

The board proceeded to examine the Lewis range finder in its present position, 65 feet 2 inches above mean low water. The working of the instrument was tested by determining ranges of a yawl rowed by a crew of enlisted men, the positions of the boat being simultaneously checked by observing parties at the extremities of the Hamilton-Wadsworth base line.

NOTE.—The board appreciated that satisfactory results could hardly be expected, as the wind and waves being very high the light boat was tossed up and down, thus presenting no steady horizontal line on which to direct the range finder. The board is also satisfied that the system of signals adopted was so defective as not to result in observations entirely simultaneous.

The distances determined by triangulation and by the range finder are as follows:

Position.	Trigonometry.	Range finder.
	<i>Yards.</i>	<i>Yards.</i>
1.....	2,164	2,158
2.....	2,648	2,587
3.....	3,200	(*)
4.....	3,644	(*)
5.....	3,560	3,435
6.....	3,534	3,485
7.....	(†)	3,470
8.....	3,412	3,320

* Not taken; post of building in the way
† Angle from station B was lost.

The board adjourned to meet to-morrow.

EDW. DAVIS,
First Lieutenant, Third Artillery, Recorder.

FORT WADSWORTH, NEW YORK HARBOR,
April 4, 1894—11 a. m.

The board met to continue its work of yesterday, and also to test the range finder of Lieut. Bradley A. Fiske, U. S. Navy, which had been removed from Fort Hamilton; Capt. Taylor, Ordnance Department, being also present. The board examined the apparatus at one end of the base line, but in consequence of a storm and heavy rain the board adjourned to meet at 10:30 a. m. to-morrow, the 5th instant.

EDW. DAVIS,
First Lieutenant, Third Artillery, Recorder.

FORT WADSWORTH, NEW YORK HARBOR,
April 5, 1894—10:30 a. m.

The board met in order to continue its work of yesterday, all the members being present except Maj. Miller, Fifth Artillery.

The board arranged to have observations taken of vessels moving in the lower New York Bay simultaneously by observers at the base ends of the Hamilton-Wadsworth line and the Lewis and Fiske range finders, respectively. The record is found below. The actual positions as determined by the Hamilton-Wadsworth base instruments were plotted and their distances from the two range finders respectively measured on the plot and placed on this record as the *true range* from the location of that range finder.

Moving objects.	Observed positions.	Fiske range finder, horizontal base.			Lewis range finder, vertical base.		
		True range.	Fiske range finder.	Error.	True range.	Lewis range finder.	Error.
		Yards.	Yards.	Yards.	Yards.	Yards.	Yards.
First tug.....	1	2,480	Not taken.	.....	2,150	2,158	+8
Second tug.....	* 2	3,000	2,975	—25	2,680	2,655	—25
Do	3	3,728	3,670	—58	3,400	3,350	—50
Do	4	4,400	4,350	—50	4,464	4,450	—14
Do	5	5,016	4,895	—121	4,680	4,685	+5
Do	† 6	5,740	5,650	—90	Wrong tug plotted.		
Schooner.....	1	2,128	2,108	—20	1,796	1,808	+12
Do	2	3,904	3,760	—144	3,576	3,665	+89
Do	3	5,660	5,390	—270	5,344	5,455	+111
Do	4	7,440	7,360	—80	7,144	7,320	+176
Do	5	9,300	8,760	—540	9,000	9,130	+130
Do	‡ 6	11,160?	9,950	—1,210?	10,872?	10,550	—320?

* No record of plotted first position of second tug.
† This tug turned off Coney Island Point and returned to Gravesend Bay, but both observers followed another tug out to sea.
‡ This sixth position is probably at least 400 yards too far away as the vessel lost speed and time in coming about.

In view of the fact that the range finder with a vertical base to be presented for test by Capt. Zalinski, U. S. Army, is nearly ready at this place, the board deemed it advisable to defer any recommendation until this instrument has also been tested both by itself and in connection with the Lewis and the Fiske. The difficulty of obtaining simultaneous observations of the same object by different instruments whose locations were necessarily quite widely separated having been clearly demonstrated to the board by this day's tests, the board respectfully recommends that steps be taken at the earliest possible date to connect the instrument houses of the different range finders by telephone for the use of the board at its next meeting.

After an examination at length of the Broad-Arrow, Labbez, and Pratt range finders, whose construction involves the same optical principle as that of the sextant, it was concluded that instruments of this class are:

First, far more liable to injury than those formed of prisms;

Second, they may be out of adjustment without attracting attention; and

Third, where the ranged object, eye of observer, and the object marking the direction of the base are approximately not in the same horizontal plane, the instruments may give very erroneous results without the observer readily detecting the errors. This results from the mirrors not being held vertically, though the direct and reflected images seem to be in the same vertical line. It was therefore resolved as follows: In the opinion of the Board for Testing Range and Position Finders, it is inadvisable to adopt for field service any range finder whose optical principle is the same as that of the sextant.

The board then adjourned subject to the call of the president.

A. C. M. PENNINGTON,
Lieut. Col. Fourth Artillery, President.

D. M. TAYLOR,
Capt., Ordnance Department.

JOHN G. D. KNIGHT,
Capt., Corps of Engineers.

EDW. DAVIS,
First Lieut., Third Artillery, Recorder.

GOVERNORS ISLAND, N. Y., *October 20, 1894.*

SIR: I have the honor to inclose herewith a résumé of work done in connection with range finders since the last report of the board in advance of its next report, thinking it may be desirable to have the information laid before the Board of Ordnance and Fortification at its next meeting.

Very respectfully, your obedient servant,

A. C. M. PENNINGTON,
Lieut. Col. Fourth Artillery,
President Board on Range and Position Finders.

Capt. J. C. AYRES,
Recorder Board of Ordnance and Fortification.

GOVERNORS ISLAND, N. Y., *October 13, 1894.*

SIR: In compliance with your instructions I have the honor to submit the following report of progress since May 5, 1894:

On the date mentioned I was appointed executive officer of the board, and reported to you for instructions.

At that time the board had under consideration for test the Lewis position finder, the Fiske position finder, the Aide-Tireur, and the Weldon range finder. Since that date the Unge telemeter, the Nolan range finder, and the Watkins depression range finder have been turned over to the board for test. The board was also directed to make a test

of the Zalinski depression position finder when the same should be ready.

It was decided that in order to make a test for accuracy of the sea-coast position finders and range finders, some standard for comparison should, if possible, be obtained which would not confine the tests to points of fixed and known position, but would enable observations to be made at varying ranges and varying directions from the positions of the instruments under test.

The conformation of the water line at the Narrows is such that a three-point horizontal base was available, one station being near the flag pole at Fort Wadsworth, and called "W," and two at Fort Hamilton. Of the latter, one, called "A," is on the north face of the fort proper, near the flag pole, and the second, called "B," near the southwest corner of the reservation. These points, as also the position "L" of the Lewis position finder; "F'," "F," and "F'," the three stations of the Fiske position finder; and "Z," the position of the Zalinski position finder, are shown on the accompanying copy of the chart of a portion of New York Harbor south of the Narrows.

It was thought that by having observations made at the three points "W," "A," and "B," one would be a check on the other two, and in case the lines laid off on the plot at these three points did not intersect at the same point, or very nearly so, sufficient doubt would be cast on that observation to throw it out of consideration as a standard.

To give a convenient and quick method of plotting the observations taken for purposes of approximate comparison, three plotting charts were made on a scale of 1-7,200, and azimuth arcs for "W," "A," and "B" stations carefully constructed. The drawing material, instruments, etc., necessary for this work were supplied by the Board of Ordnance and Fortification on application for the same, as were also a number of lithographic copies of the harbor chart prepared for the use of the above-mentioned Board in the office of the Chief of Engineers.

In order that observations on moving vessels should be made simultaneously at all the stations, these latter were placed on a single telephone circuit and provided with long-distance telephones furnished by the Signal Corps.

All this occupied most of the time from the middle of May until August, when a few tests preliminary to a test by the full board were made.

The test by the board was made on August 21, a record of which accompanies this letter. The instruments tested on that date were the Fiske and the Lewis.

Although this test was in a great measure satisfactory, it was believed that better results could be obtained from both instruments, as the test was designed for one of accuracy at varying ranges. Accordingly on a succeeding date, the steam launch *Thayer* was utilized as a target for observation. Test of the Lewis instrument only could be held, as the Fiske instrument was found to be out of order and would not work.

The record of this test of the Lewis position finder on September 20 is inclosed.

The Fiske instrument was repaired, and on October 6 the *Thayer* was again utilized. Just previous to the test a break in one of the wires of the Fiske position finder was discovered and repaired and the instrument adjusted, but not before the *Thayer* had partially run her course; and from the want of familiarity with the work of the men who used the telephones, the readings can not be regarded as giving

results fair to this type of instrument. The record of this day's test is also inclosed.

In this connection I desire to state:

(1) With reference to the Fiske position finder, the inventor himself is not satisfied with this type, and has, I understand, made proposals for substituting an improved form, doing away with the range voltmeter, using the zero principle of the Wheatstone bridge for determining parallelism of plotting arm to secondary telescope, and substituting for the limited amount of resistance wire on a nonconducting arc a greatly increased amount of resistance wire on a drum. This proposal will, I assume, come up before our board at its next meeting.

(2) With reference to the so-called Standard base, I am convinced that the instruments used thereon do not give satisfactory results. The officers who have used them in the tests are careful, painstaking men, and there has been ample time allowed between observations to take precise readings; but even at comparatively short ranges the plotting from the three stations W, A, and B gives triangles of some size instead of a point of intersection.

The Lewis instrument was tested for repetition when at an altitude of 175 feet. I propose, in compliance with your instructions, to test for the same at its present height; also, to make a further test of the Fiske position finder at known distances.

The Watkins depression range finder was partially tested—that is to say, it was placed on its tripod and an endeavor made to test it for accuracy, but it was found that whenever the sliding support for the upper arm was moved the instrument was thrown out of level.

I then determined to have a firm support made for the plate on which the instrument rests, and the commanding officer at Fort Wadsworth has had a solid pier erected, on top of which this plate has been cemented. This work has but just been completed and a further test of the instrument will be made at an early date.

With reference to the field range finders:

The Aide-Tireur and Unge have both been tested, but it has required time to become familiar with the working of these instruments, as the descriptions with them are faulty. The tests so far have not been particularly satisfactory, but it is not thought best to submit any record of them until more extended practice has been had.

The Nolan range finder has not been tested; nor has the Weldon.

The board was informed some time ago that the Zalinski position finder would be ready for trial on October 10, but no intimation has been received that it is ready.

Very respectfully, your obedient servant,

HENRY L. HARRIS,
First Lieutenant, First Artillery,
Executive Officer of the Board.

Col. A. C. M. PENNINGTON,
Fourth Artillery, U. S. Army,
President Board to Test Range Finders,
Governors Island, N. Y.

Table showing percentages of errors in observations with position finders, made at the Narrows, New York Harbor, in presence of Board to Test Range Finders.

AUGUST 21, 1894.

[Position finder under test, Lewis.]

No. of observations.	Plotted distance.	Observed distance.	Per cent. of error.	Plotted azimuth.	Observed azimuth.	Error.	Observations on moving steamboats or.
	<i>Yards.</i>	<i>Yards.</i>		<i>°</i>	<i>°</i>	<i>°</i>	
1							
2							
3							
4	4,268	4,275	+0.16	346 14	346 04½	—0 9½	
5	1,367	1,370	+0.21				
6							
7	1,425	1,490	—0.33	318 38	318 47	+0 9	
8	2,025	2,024	—0.05	326 45	326 47½	+0 2½	
9	2,556	2,595	+1.52	331 58	331 57	—0 1	
10	3,093	3,150	+1.86	335 43	330 35½	—5 7½	
11	4,682	4,910	+4.87	342 45	347 36½	+4 31½	
12	5,210	5,455	+4.70	344 39	344 27	—0 3	
13	5,751	(?) 6,025	+5.66	346 01	346 56½	+0 55½	
14	6,295	(?) 6,655	+5.72	347 14	347 08	—0 6	
15	6,820	(?) 7,045	+3.30	348 14	348 04½	—0 9½	
16	7,345	7,650	+4.15	349 16	349 13½	—0 2½	
17	7,882	8,175	+3.59	350 20	350 16½	—0 3½	
18	8,405	8,700	+3.03	351 18	357 21½	+6 3½	
19	8,939	9,250	+3.48	352 18	352 17	—0 1	
20	9,478	9,775	+3.13	353 14	353 07½	—0 6½	
21	10,048	10,270	+2.11	354 00	353 52	—0 8	
22	10,584	10,790	+1.94	354 43	354 31	—0 12	
23	11,146	11,350	+1.83	355 16	355 08	—0 8	
24							
25	2,110	2,100	—0.47	293 23	293 25½	+0 2½	Doubtful standard.
26	2,460	2,450	—0.40	299 31	299 33½	+0 2½	
27	2,844	2,840	—0.14	303 52	303 56	+0 4	
28	3,225	3,225	0.00	307 35	307 31	—0 4	
29	3,630	3,670	+1.10	310 29	310 22	—0 7	
30	4,060	4,125	+1.60	312 38	312 30½	—0 7½	
31	4,480	4,540	+1.33	314 17	314 09	—0 8	
32	4,925	5,030	+2.13	315 18	315 11½	—0 6½	
33	5,360	5,490	+2.42	315 18	315 10½	—0 7½	Doubtful standard.
34	5,750	5,730	—0.36	313 45	313 31	—0 14	
35	6,070	6,025	—0.88	311 39	311 27	—0 12	
36	6,460	6,325	—2.09	309 44	309 28	—0 16	Doubtful standard.
37							
38	2,107	2,060	—2.23	289 34	289 17	—0 17	
39	1,860	1,825	—1.88	281 44	281 14½	—0 29½	
40	1,658	1,650	—0.48	271 23	271 09	—0 14	
41	1,516	1,490	—1.71	259 17	259 22	+0 5	
42	1,460	1,445	—1.03	245 32	245 32	0	
43	1,608	1,600	—0.49	323 07	323 08	+0 1	
44							
45							
46							

Copy 1 from records and plotting.

HENRY L. HARRIS.
First Lieutenant, First Artillery, Executive Officer of Board.

Table showing percentages of errors in observations with position finders, etc.—Continued.

AUGUST 21, 1894.

[Position-finder under test, Flske.]

Number of observation.	Plotted distance.	Observed distance.	Per cent of error.	Plotted angle.	Observed angle.	Error.
	<i>Yards.</i>	<i>Yards.</i>		° /	° /	° /
1.....	5,238	5,250	+0.23	2 45	7 40	+4 55
2.....	4,715	4,750	+ .74	35 48	36 04	+0 16
3.....						
4.....	4,590	4,650	+1.09	27 30	27 39	+0 9
5.....	1,700	1,700	0	25 00	25 11	+0 11
6.....						
7.....						
8.....						
9.....						
10.....	3,440	3,460	+ .58	17 30	17 40	+0 10
11.....	5,020	5,140	+2.39	24 25	24 32	+0 7
12.....	5,543	5,790	+4.45	26 14	26 26	+0 12
13.....	6,082	6,300	+3.58	27 45	27 57	+0 12
14.....	6,625	6,900	+4.15	28 59	29 08	+0 9
15.....	7,144	7,420	+3.86	29 55	30 08	+0 13
16.....	7,668	8,000	+4.33	31 05	31 19	+0 14
17.....	8,203	8,500	+3.62	32 13	32 22	+0 9
18.....	8,722	9,060	+3.96	33 14	33 29	+0 15
19.....	9,255	9,460	+2.21	34 15	34 26	+0 11
20.....	9,780	10,000	+2.14	35 05	35 19	+0 14
21.....	10,362	10,600	+2.29	36 02	36 03	+0 1
22.....	10,900	11,200	+2.75	36 43	36 43	0 0
23.....						
24.....	2,079	2,120	+1.97	26 02	25 24	+0 38
25.....	2,385	2,450	+2.72	19 18	18 47	+0 26
26.....	2,780	2,810	+1.08	14 17	14 02	+0 15
27.....	3,175	3,230	+1.73	10 48	10 33	+0 15
28.....	3,562	3,625	+1.20	8 46	7 30	+0 16
29.....	3,972	4,040	+1.71	5 20	5 40	—0 20
30.....	4,405	4,430	+ .56	3 29	3 18	+0 11
31.....	4,830	4,880	+1.03	2 00	1 52	+0 8
32.....	5,272	5,320	+1.10	1 09	1 59	+0 10
33.....	5,708	5,750	+ .73	1 10	1 05	—0 5
34.....	6,096	6,160	+1.05	2 43	2 44	+0 1
35.....	6,420	6,450	+ .46	4 43	4 43	0 0
36.....	6,790	6,820	+ .44	6 38	6 39	+0 1
37.....	7,180	7,250	+ .97	8 08	8 07	—0 1
38.....	2,400	2,380	— .83	22 30	22 34	—0 4
39.....	2,130	2,135	+ .23	28 46	29 00	—0 14
40.....	1,889	1,915	+1.38	37 00	37 01	—0 1
41.....						
42.....						
43.....						
44.....	1,452	1,440	— .81	1 00	1 00	0 0
45.....	972			15 51	15 58	—0 8
46.....						

Copied from records and plotting.

HENRY L. HARRIS.

First Lieutenant, First Artillery, Executive Officer of Board.

Table showing percentages of errors in observations with position finders, etc.—Continued.

SEPTEMBER 20, 1894.

[Position finder under test, Lewis.]

No. of observa- tion.	Plotted distance.	Observed distance.	Per cent of error.	Plotted azimuth.	Observed azimuth.	Error.	Observations made on Thayer when not moving.
	<i>Yards.</i>	<i>Yards.</i>		<i>° ' ''</i>	<i>° ' ''</i>	<i>' ''</i>	
1	1,470	1,470	0	348 00	348 17½	+17½	Doubtful at Lewis for azimuth.
2	2,450	2,400	—2.04	346 49	347 00½	+11½	
3	3,435	3,380	—1.60	346 35	346 33½	—1½	
4	4,320	4,330	+ .23	347 33½	347 33½	—	
5	5,475	5,350	—2.28	349 40	349 39½	—½	
6	6,495	6,360	—2.08	350 47	350 47	0	
7	8,020	7,630	—4.86	353 03	353 03	—	Do.
8	8,770	8,375	—4.50	353 30	353 28	—2	
9	9,620	9,315	—3.17	353 54	353 2½	—51½	Doubtful standard.
10	{ 9,880 } 10,360 }	9,750		352 08	352 14½		Very doubtful stand- ard.
11	9,110	9,180	+ .76	347 30	347 26½	—3½	
12	8,235	8,200	— .42	343 2½	347 59		Doubtful azimuth at Lewis.
13	7,145	7,185	+ .56	336 37	336 35½	—1½	
14	6,415	6,450	+ .51	327 39	327 39	0	
15	5,590	5,550	— .71	317 40	317 31½	—8½	
16	4,740	4,715	— .52	312 02	311 50½	—11½	
17	3,955	3,900	—1.39	305 14	305 09	—5	
18	3,265	3,200	—1.99	295 14	295 00	—14	
19	2,310	2,300	— .43	270 50	271 01	+11	

Compiled from records and plotting.

HENRY L. HARRIS,
First Lieutenant, First Artillery, Executive Officer of Board.

OCTOBER 6, 1894.

[Position finder under test, Lewis.]

No. of observa- tion.	Plotted distance.	Observed distance.	Per cent of error.	Plotted azimuth.	Observed azimuth.	Error.	Observations made on Thayer when not moving.
	<i>Yards.</i>	<i>Yards.</i>		<i>° ' ''</i>	<i>° ' ''</i>	<i>° ' ''</i>	
1	1,490	1,500	+ .67	346 28	346 14½	—0 13½	
2	2,620	2,570	—1.90	344 40	344 37½	—0 2½	
3	3,570	3,575	+ .14	345 02			
4	4,490	4,650	+3.56	347 05	346 57½	—0 7½	
5	5,450			340 09			
6	6,490	6,750	+4.00	350 48	351 38	+0 50	Doubtful standard.
7	7,680	7,620	— .78	354 09	353 00	—1 09	Do.
8	8,540			354 22			
9							Very doubtful stand- ard.
10							Do.
11	10,070	10,280	+2.08	352 05	352 04½	—0 ½	
12	10,030	10,330	+2.99	350 37	350 40½	+0 3½	Doubtful standard.
13	10,110	10,220	+1.08	349 02	349 01½	—0 ½	Do.
14	9,310	9,675	+3.92	346 03	346 05½	+2½	2-point base—"B" lost.
15	8,500	8,845	+4.06	343 34	343 36½	+2½	Do.
16	7,590	7,700	+1.45	340 43	340 45	+2	Do.
17	6,760	6,870	+1.62	335 28	335 29	+1	
18	5,820	5,825	+ .08	326 48	326 46	—0 2	
19	5,130	5,155	+ .48	317 18	317 15	—0 3	
20	4,615	4,605	— .21	311 04	302 30	—8 34	Evidently an error in reading.
21	3,953	3,890	—1.59	308 22	308 16½	—0 5½	
22	3,287	3,245	—1.28	303 22	303 07½	—0 14½	
23	2,508	2,470	—1.51	295 03	294 53	—0 10	
24	1,730	1,740	+ .57	276 08	276 03	—0 5	

Compiled from records and plot.

HENRY L. HARRIS,
First Lieutenant, First Artillery, Executive Officer of Board.

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